VOL. 161 — NO. 16

OCTOBER 14, 1961

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

Marina scene at Lake Texoma, Tex., points up convenience and pleasure of being able to telephone from one's boat at dock. The drive-in coin telephone for boats—a U. S. first—was installed this summer in Eisenhower State Park. Sign out of sight above says: "Telephone Here."

Circulation This Issue
14,421 of Which
13,888 Is Paid

MANAGEMENT · PLANT · TRAFFIC · COMMERCIAL · LEGAL · ACCOUNTING

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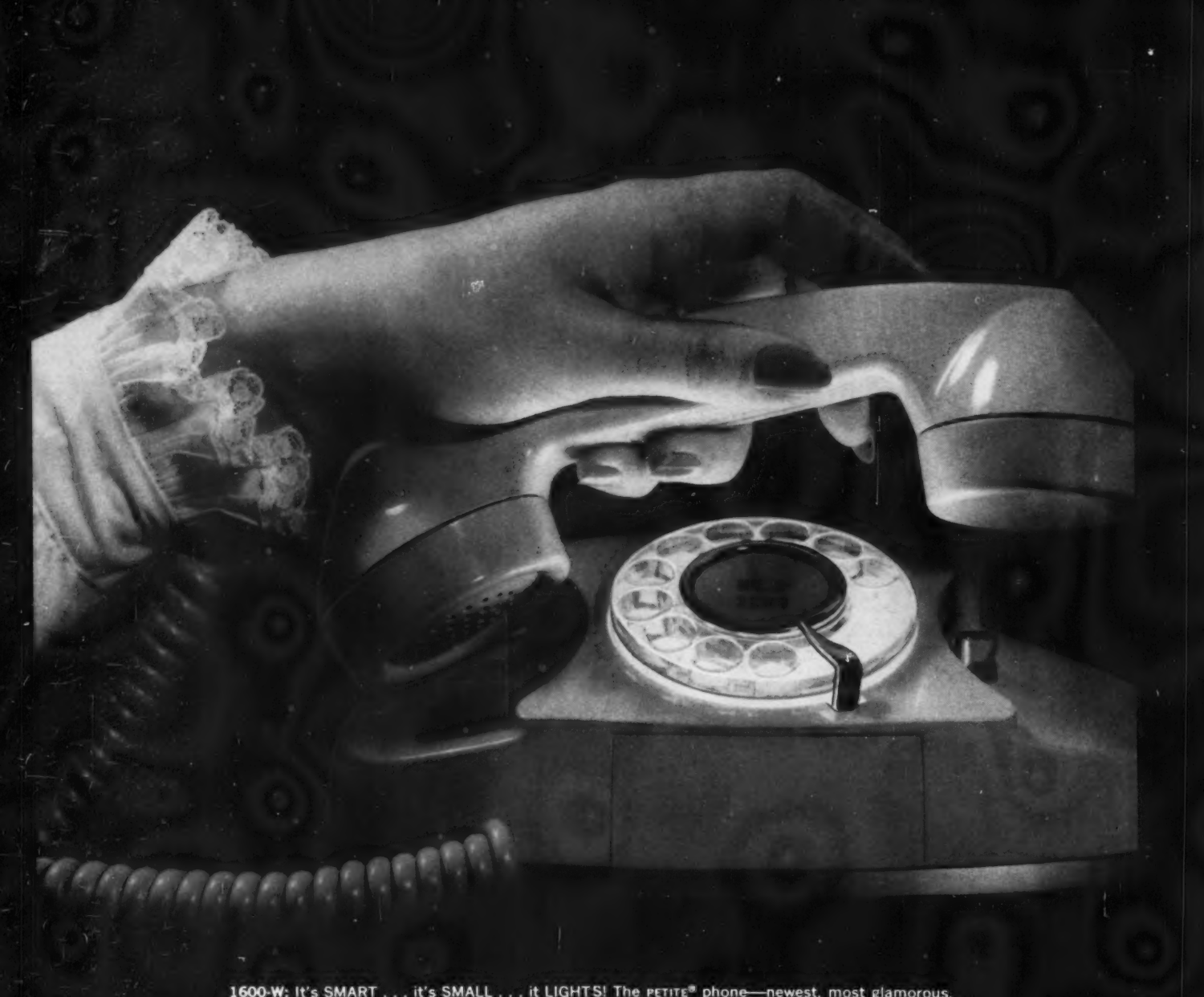

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1543-W: It's handsome, compact, styled with snap and sparkle. This telephone is engineered for high fidelity of voice transmission, for ruggedness, for true full-range performance. Lightweight handset, of course.

1573-W: (Above) Use it two ways and reap the profits! It provides two-line service plus intercom, with Hold on each line. Or, with a simple adapter, it's a three-line telephone with Hold on each line, without intercom.

1553-W: (Right) The ideal telephone for many, many applications: in kitchen, den, halls, workrooms—just about anywhere in the home. Great for your business subscribers, too—especially where space is a problem. Its slim, trim design gives it tremendous versatility.

1575-W: (Below) This 6-line telephone, used with the Stromberg-Carlson 6K-1 PBX, is the smallest phone of its kind. Flexibility and versatility are unmatched, with an almost infinite variety of services.

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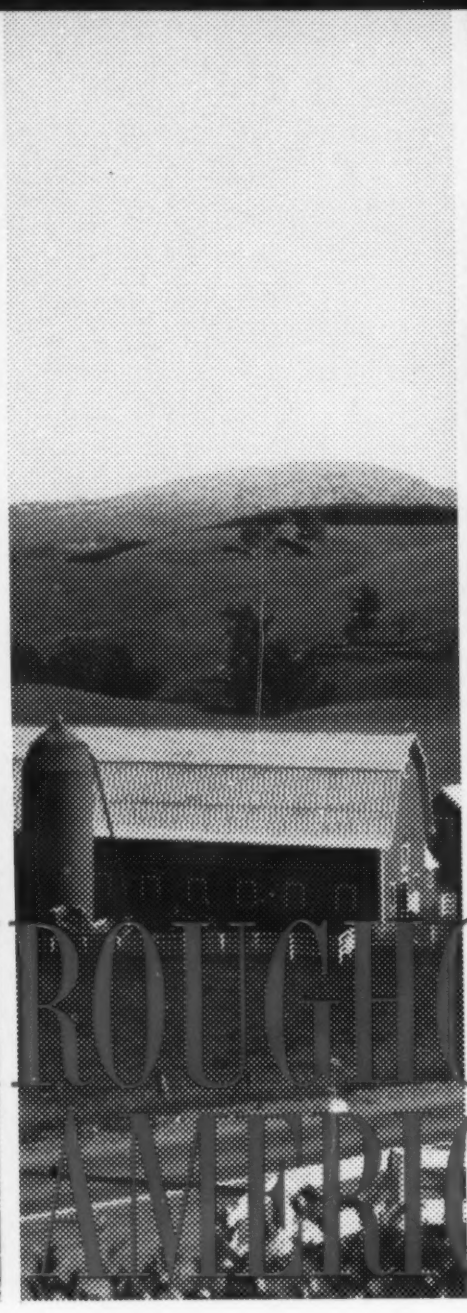
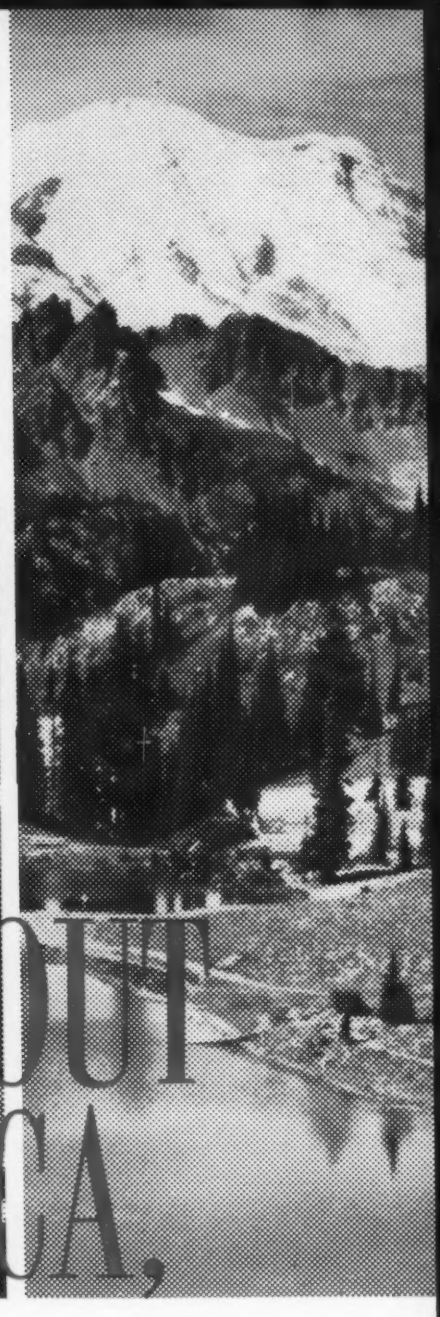
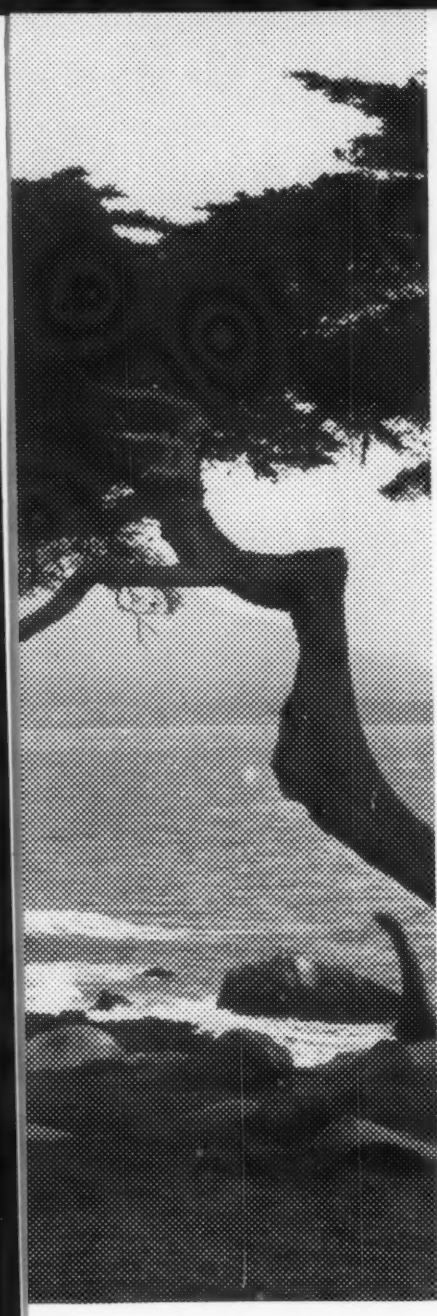
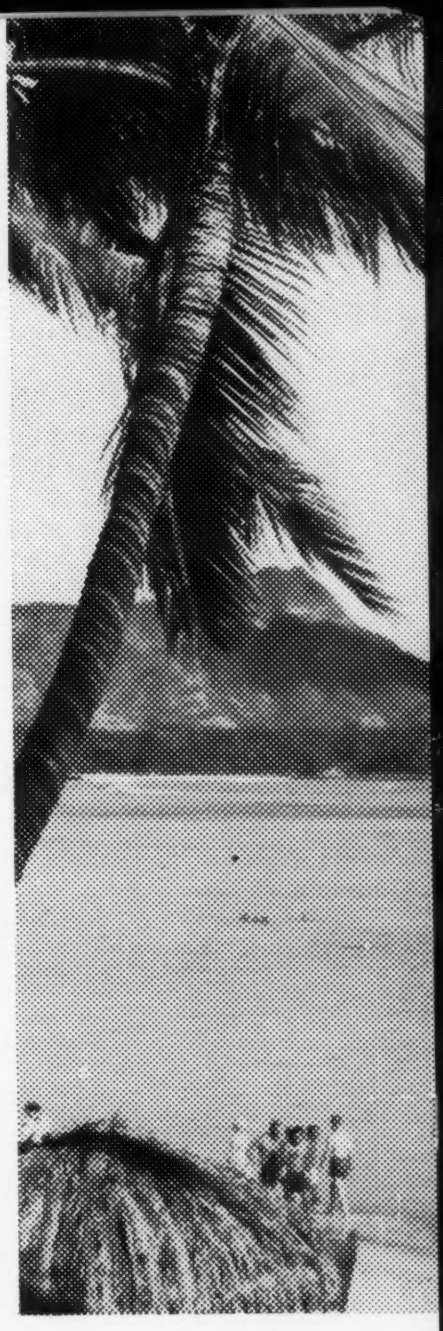




THROUGHOUT AMERICA,

ONE TELEPHONE STANDS OUT





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FLASHES AND PLUGS

DIGITS DEADEN DIAL. In our modern world we assume that almost everyone has been exposed to the dial telephone at one time or another, and therefore knows how to dial calls.

However, evidence somewhat to the contrary comes from D. M. Robb, owner of the Electra (Tex.) Telephone Co., who tells this story.

It seems a subscriber complained to him that she was unable to dial her telephone. She therefore assumed that her telephone was "no good" and proceeded to tell Mr. Robb this.

Mr. Robb, a patient and tactful man, didn't argue with her. Since her complaint was that she couldn't get the local number 2192 (in Electra local numbers can be reached by dialing four digits only), he asked her to show him how she did her dialing.

She then proceeded to put one finger in the "2" hole, one finger in the "1" hole, one finger in the "9" hole and another finger in the "2" hole, thus putting her four fingers in three holes at the same time. As a result, as she tried to dial, the finger in the "1" hole hit the finger stop and she found herself unable to turn the wheel further.

Although Mr. Robb didn't elaborate, we can assume he took this opportunity to demonstrate to her the correct way to dial.

•

WHAT, NO PHONEVISION? 'Way back in 1877, the Bell of Canada *News* reports, they were realists, and according to this story, a spark of imagination may have been lacking. A note from that year read:

"We are informed that the telephone has been used for kissing purposes in New York, and that the delicious sound was distinctly heard for a distance of three miles. We most earnestly protest against such an innovation. Distance may 'lend enchantment to the view,' but it would certainly spoil a kiss."

•

PARTIES POLISH POLITENESS. At El Centro, Cal., a mother called the police desk and reported her problem with her little boy. She said she was having "trouble with my little boy and need an officer to come and scare him."

To this request, she got a polite answer—from Officer Lou Polite—whose polite, but terse, comment was—"We do not scare children."

The mother was equally polite—she thanked the officer and hung up.

•

IT'S DOWN, ATTIC OR BASEMENT. In a college town, a student called a boarding house to ask about rooms. "What do you charge for your rooms?" he asked.

"Five dollars up," was the reply.

"But I'm a student," he said, thinking the price a little high.

"That being the case, the price is five dollars down," replied the landlady, who had had experience.

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

Oct. 14, 1961

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NEW EASY-VIEW STYLING—For 1962, all conventional pickups, panels and Suburban Carryall models ride in with trim new look-ahead lines, featuring a new hood design sloping lower at the front to let you see the ground as much as 8½ feet closer. Safer, easier viewing results! Also, there's a handsome new grille, new custom exterior trim, and sparkling new colors. Inside, too, things are looking better for the man at the wheel, with new easy-to-live-with colors and tough good-looking upholstery.

NEW STEP-VAN 7—Here's good news—211 cubic feet of it!—for light-duty delivery operators with high-bulk lading problems. And Chevrolet's new Step-Van 7 is built to give your bulky loads a better ride, too, on the years-ahead Independent Front Suspension chassis design that's revolutionized the conventional truck field. With the big-saving High Torque 235 Six under the engine box, there's plenty of power to take your tightest schedules in stride, and a long list of better built body features adds up to easy work and extra-long working life.

NEW HIGH TORQUE POWER—New wider power choice for '62 lets you match your job needs better than ever, in all conventional pickup, panel and Carryall models. There's the standard-equipment 235 Six, cornerstone of the Chevrolet reputation for unbeatable operating economy, and the spirited, ultra-efficient 283 V8 for premium payload punch. *And now, in addition, the heavy-duty 261 Six is available at nominal extra cost, offering an extra measure of stamina and durability to keep on delivering in the roughest, toughest kind of duty.*

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Name

Title

Company

Address

City Zone

County State

1962 CHEVROLET JOBMASTER TRUCKS

CHEVROLET

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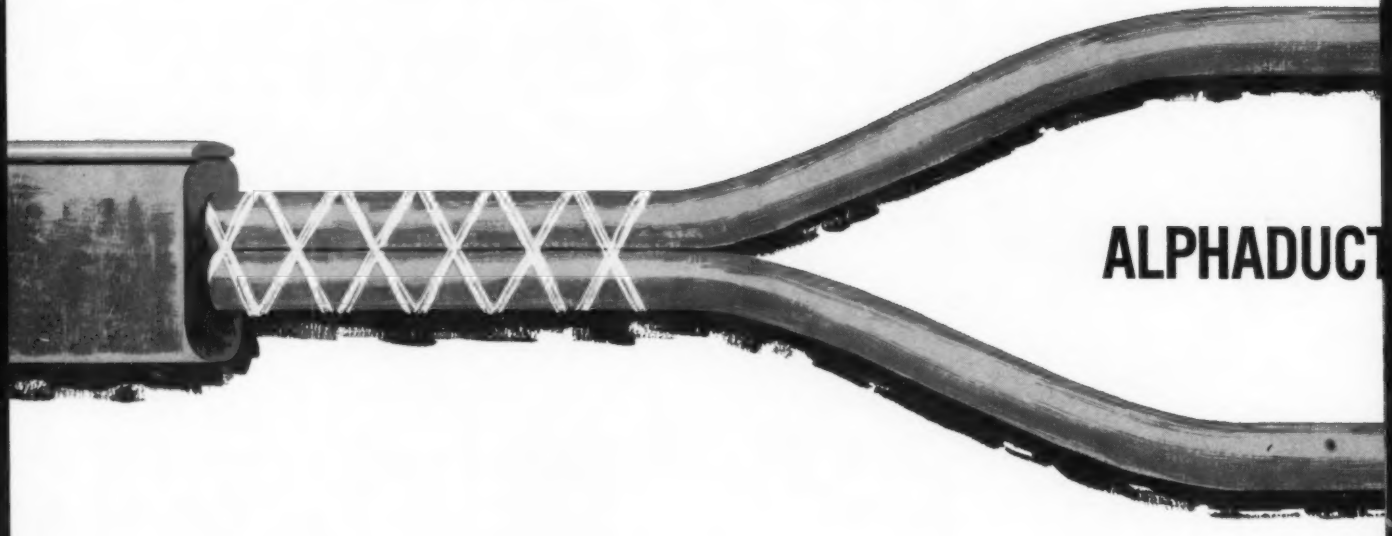
LARGEST SUPPLY



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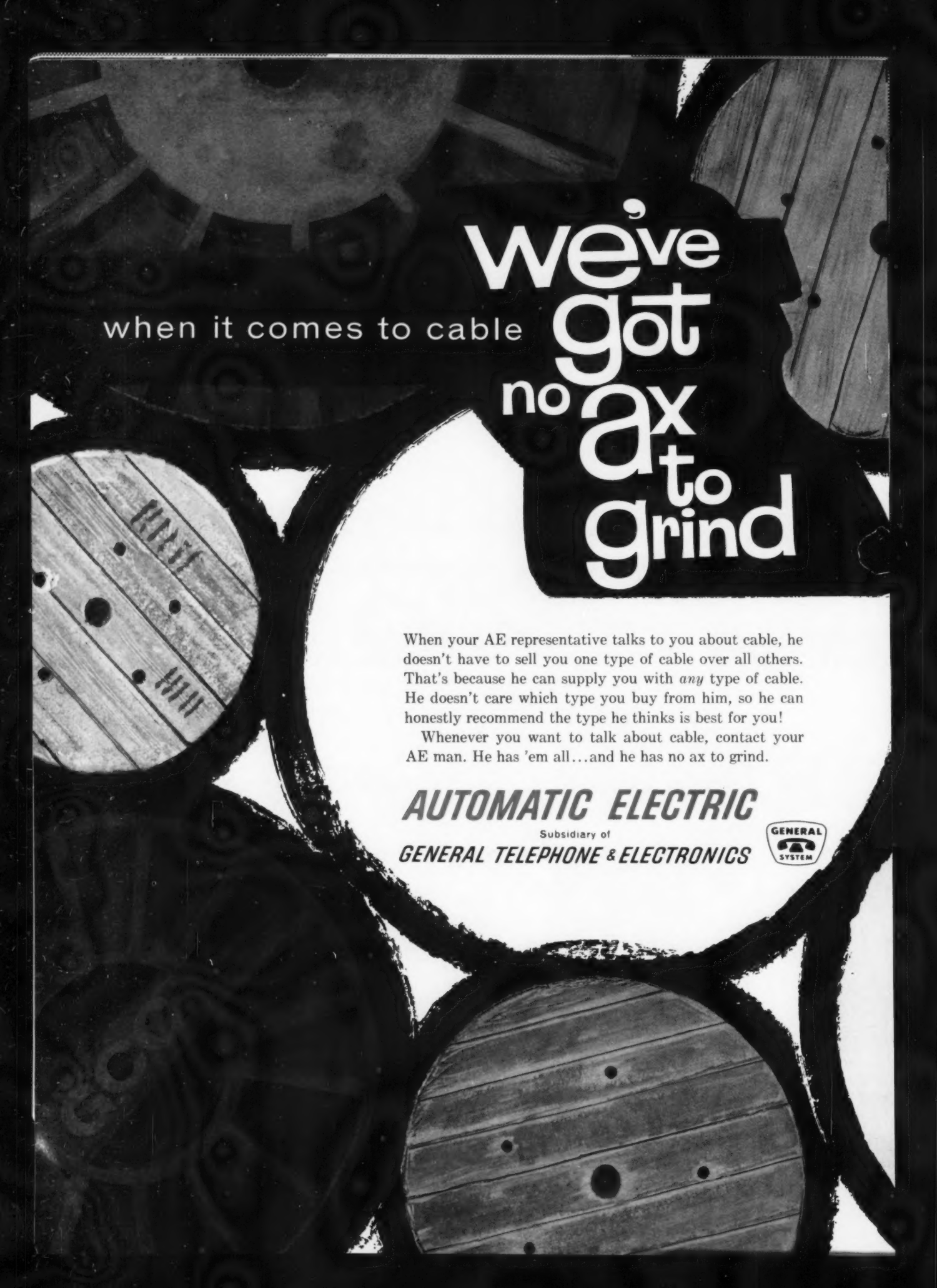
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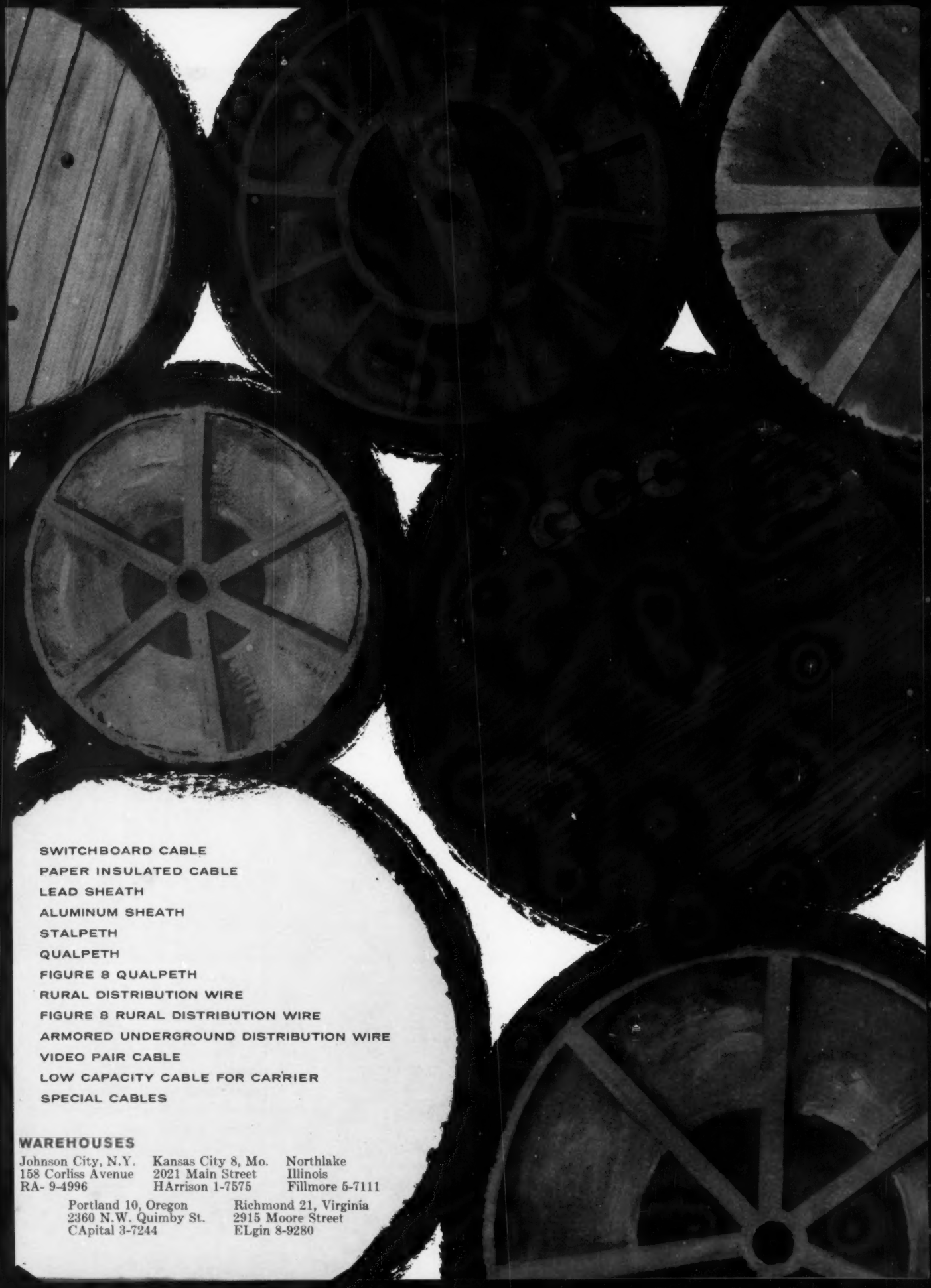

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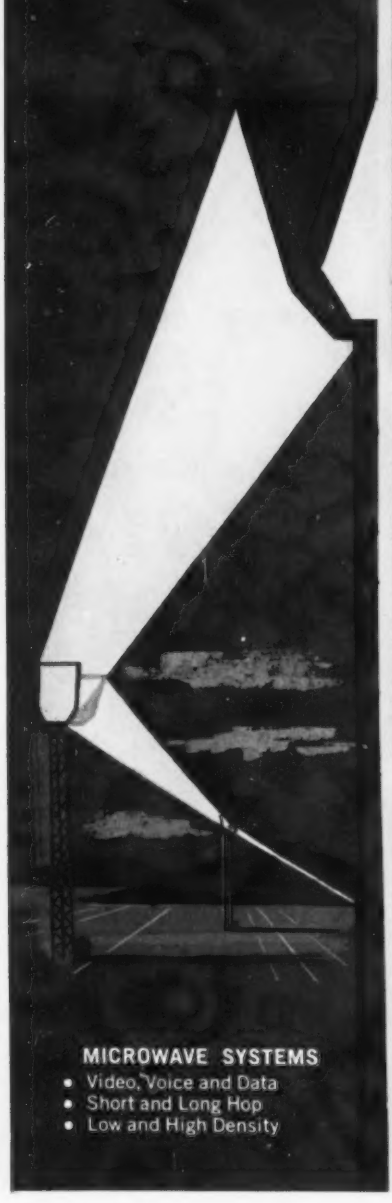

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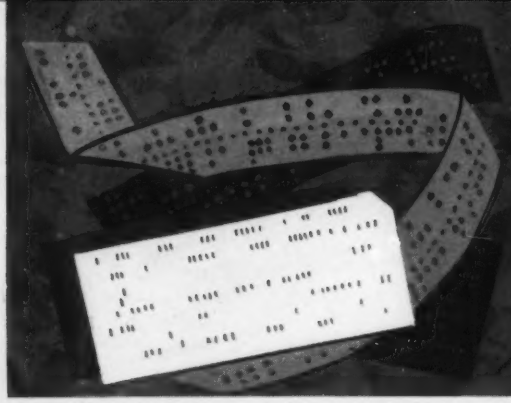

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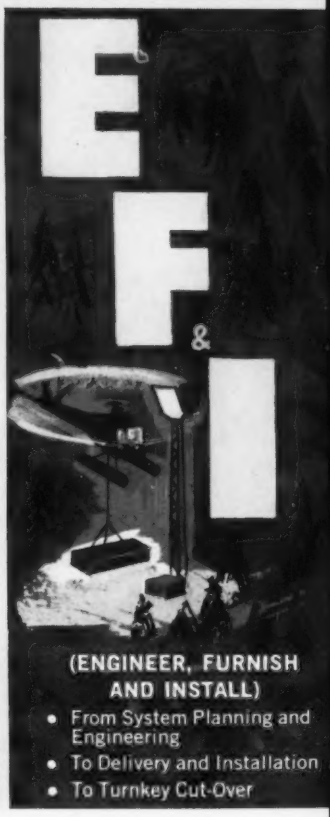

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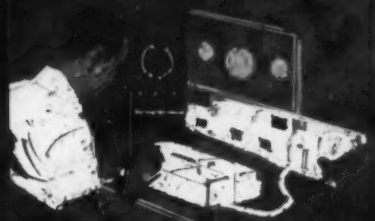

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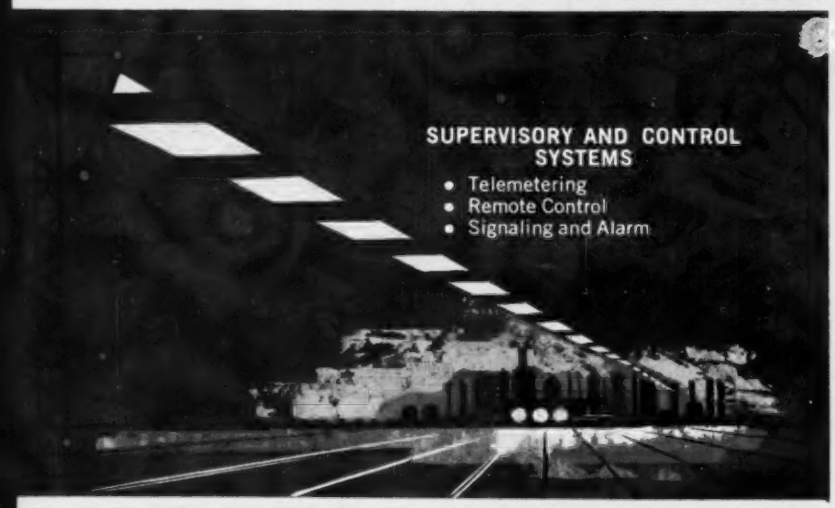

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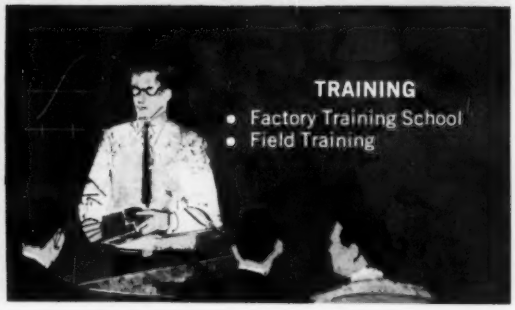

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After graduation, Harold started his business career as a wholesale routeman in dairy products. A short time later, he became a department manager in a chain store branch.

It was in 1953 that Harold joined General Telephone as a salesman in our Kewanee, Illinois, unit. He was promoted to Sales Supervisor of our Princeton unit in 1958.

Harold and his wife have two fine young children. You'll find Harold active in community groups like the Elks, the Princeton JC's, and his Men's Club at church.

Harold is typical of the "Revenue Men" who work for General Telephone Directory Company and for you. And they all have one thing in common—they are always an asset to any community in which they live.

Our Directory "Revenue Men" provide the Independent Telephone Industry with a flexible and highly skilled telephone directory organization. These men—working out of 35 strategic locations—are experienced specialists, trained to give you *complete* and *quality directory service.*

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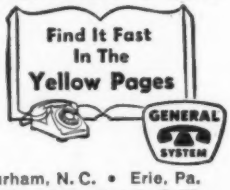

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GUEST EDITORIAL

Socialism in the Sky

IF ALONG ABOUT the turn of the century some dreamers had come forward with a plan to put one of these new-fangled telephones in every home and hook together every city and hamlet, they might well have concluded that this was beyond the resources of private industry.

After all, as late as 1880 there were only 34,000 miles of telephone wires on the whole continent. There were a host of little telephone companies, many using different kinds of equipment. Some cities had two or more telephone companies that couldn't connect. Nowhere in sight was there the capital necessary, nor the organization, to carry out such a fantastic dream.

Only government itself, so it might have seemed, could take on a job of such magnitude in money and planning. Indeed, in a great many countries the job was taken on by governments and, to this very day, the telephone systems are run by the government, like the postal services.

But fortunately this country lagged the rest of the world in socialistic economics; our telephone system was allowed to grow in free soil. And it would be laboring the obvious to point out that here the dream has not only come true but has been surpassed. The contrast between our phone system and those operated by governments is a dramatic one to anybody who has spent even a few vacation weeks abroad.

Yet, curiously, we are being told now that further expansion of this communications system, using relays in the sky, is too formidable a job for private enterprise. Its magnitude in money, planning and effort is so great that we must have it done by government.

Thus there is a concerted campaign underway in Washington to get President Kennedy to reverse his very wise decision in favor of private development of the satellite system for intercontinental communications. All manner of arguments are marshalled. At one and the same time it's said private industry would create a great monopolistic combine but that it's too big for private industry.

Most of these arguments are window-dressing. Private capital is not lacking to build and operate a communications satellite; nor does it involve insurmountable operating difficulties. As for the "combine" threat, there are workable proposals to make it a cooperative effort of many companies, large and small, with adequate regulatory safeguards to protect the public interest.

What has actually happened is that in socialistic economic philosophy, Washington is no longer laggard. As in the public power arguments, the bias is simply that such enterprises "ought" to be government enterprises just because they "ought." That being the basic attitude, the so-called practical arguments are made to fit the bias.

For instance, it's said there will be a "fatal delay" in waiting for private enterprise. But why is there any delay at all? Simply because government delays final authorization. Again, if it's pointed out that the danger of a combine is resolved by having many participating companies, the reply is that this opens a "Pandora's box"; it would "splinter" ownership. How is anyone to grapple with such slippery reasoning?

There is only one way. That is for the President to realize that such arguments are irrelevant, and to stick by his original decision because it is the right one.

The point here is not merely that private enterprise capital will save the federal government large sums of tax money, though that is no small consideration. It is, rather, that a private system will simply give us a better communications system, more economically operated by the very demands of making a private profit and more efficiently operated by the absolute necessity of satisfying the customers.

If you doubt which system is the better—government or private—pick up the telephone, phone your local postmaster and ask for more mail service. And see how far you get—*Reprinted from The Wall Street Journal, September 13, 1961.*

* * *

TELEPHONY, too, has been concerned about government ownership of the satellite communication system; this was expressed in our editorial, "Too Many Cooks?" on page 17 of the July 29 issue.

IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

Federal telephone eavesdropping under fire. Liberal group unhappy with 1961 Congressional session. Subcommittee sets FCC satellite plan hearing. Sign CENTO telecommunications contract. Authorize first transpacific cable. Suspend revised AT&T developmental line-switched tariff. Commissioner Hyde pleads for preservation of broadcast free enterprise.

THE WORD IN Washington is "big brother may not be watching you, but his secretary probably is listening in on your telephone calls."

A House of Representatives report said a large majority of federal agencies permit "telephone eavesdropping," and the report recommended a complete ban on telephone monitoring by government officials unless there is an advance warning to the person on the other end of the line. These recommendations were made by the House Government Information Subcommittee after an investigation of the telephone practices of 37 federal agencies.

The subcommittee said 33 of the agencies questioned permitted telephone monitoring, 21 had no regulations on the subject and 17 required no advance warning.

The report also said an initial check indicated "many thousands of dollars a year are spent on listening-in devices" which allow secretaries to come on the line secretly and take notes. It quoted the General Services Administration as saying there were 876 such devices installed on telephones connected to GSA-operated switchboards.

When a subcommittee spokesman was asked for a breakdown on the listening gadgets, he said the White House had five, the Peace Corps 40, the Budget Bureau 57, the Civil Rights Commission one, and the President's Science Advisor five.

The House Government Operations Committee said the FCC was one of 21 agencies that have no regulations concerning telephone monitoring, and is one of 16 that does not require the caller be notified a third party is listening.

Chairman Newton Minow told the committee's Government Information Subcommittee that the commission has no regulations concerning monitoring, because it never believed that this concept included secretaries listening in on telephone calls.

The report recommended that monitoring be tightly controlled by regulations which would require that: Telephone eavesdropping be banned; the use of recording devices be banned unless advance notice is given the other party; and that callers be notified whenever a secretary is placed on the line "for any purpose."

The report noted that the FCC staff members, as a result of the subcommittee's inquiries, have begun formulating rules governing telephone monitoring. The committee appeared particularly irked that the FCC, which is "charged by law with the duty of regulating interstate and foreign commerce in communication," doesn't regulate telephone monitoring by its own personnel and permits the practice without requiring that the caller be warned.

The subcommittee said most government officials rationalized telephone monitoring as an aid to efficiency.

The committee did not condemn all telephone monitoring, but it said:

"When monitoring is done secretly and becomes eavesdropping, the bureaucracy is sacrificing principle to the altar of efficiency. No matter what the excuse, there is something mean and unprincipled in a government official's arranging for a secretary or a transcribing machine to eavesdrop on telephone calls."

The committee suggested that if efficiency is a valid excuse for monitoring, the practice should be permitted only under clear, written guidelines.

As a result of the committee's disclosures, telephone monitoring devices were barred from use in the Department of Health, Education and Welfare. But Health Secretary Abraham Ribicoff's directive said a third party could listen in on calls to transcribe such things as addresses and dates.

The Secretary's directive specified that whenever any kind of third-party listening-in is deemed necessary, both parties to the telephone conversation should be advised.

The committee in a report said HEW had more known special listening-in gadgets than any other agency.

Ribicoff's directive said:

"It has come to my attention that prior to my assuming office there had grown up a practice in this department, as well as in other governmental agencies, of having secretarial and some other personnel listen in on telephone conversations, usually those of their supervisors (at the supervisors' request) without informing the other party to the telephone conversation of the fact that a third party is listening in.

"I can see the need on occasion to have a secretary, upon request, pick up an extension telephone to transcribe accurately addresses, dates, etc., being mentioned in a telephone conversation."

He said that when this occurs, both parties to the telephone conversation should be advised that the information is being transcribed.

"However," he added, "I see no need to incur added expense for special 'gadgets' to facilitate regular monitoring. Hereafter no such 'listening-in' or monitoring shall be permitted without the knowledge of all parties to the conversation. All telephone devices which are currently in use to facilitate such monitoring shall be taken out or disconnected and no future ones shall be installed."

An estimated savings of $1,500 a year is expected through elimination of special monitoring devices.

ADA Unhappy

The liberal Americans for Democratic Action called the 1961 congressional session "at best, one of callous ex-

pediency." ADA blamed both congressional leaders and President Kennedy for "a formula of accommodation and compromise" with conservative Southern Democrats and Republicans.

But a spokesman for the AFL-CIO, which usually agrees with the ADA, said that the first session of the 87th Congress was "a success."

The ADA which uses its "liberal quotient" to assess the voting records of Congressmen, (just as the Americans for Constitutional Action judge the solons for their conservative votes) found that the House was 49 per cent liberal while the Senate was 55 per cent liberal. The ADA defines its "liberal quotient" as "a measure of the liberalism of a member of Congress determined by the proportion of his votes in harmony with liberal policies" (that is, programs espoused by ADA). Twenty-four Senators, (all Democrats except for Republican Jacob K. Javits of New York) got the ADA blessing of 100 per cent perfect voting records. Ninety-eight Representatives (all Democrats except Republican Seymour Halpern of New York) scored 100 per cent.

The ADA concluded morosely that "The door to the New Frontier remains closed." From a conservative's viewpoint, it hardly seems that the liberal ADA has anything to cry about. Of course, anything less than a complete liberal steamroller would prove unsatisfactory to this group, but the conservatives are not doing handstands over their record in holding the line, even though they finished the session with a better record than they had anticipated.

Congressional Score Sheet

Like any other good Monday morning quarterback who analyzes yards gained, first downs, etc., in assessing the weekend's football game, your Washington columnist feels compelled to give you a scoreboard look at the recently concluded session of Congress.

The Senate was in session 146 days for a total of 1,005 hours while the House convened 147 days for a total of 569 hours and 43 minutes. A total of 327 public bills were enacted into law and 264 private bills. The proceedings of both houses took up 20,244 pages in the Congressional Record, plus 7,878 pages in the Appendix. The Senate passed 1,133 bills; the House passed 1,232. A total of 14,026 measures were introduced, 3,071 in the Senate and 10,995 in the House. The Senators answered 33 quorum calls while the House members raced to the Capitol for 115 quorum calls.

A pleasant lull has now befallen Capitol Hill. Many staff assistants and secretaries rushed off to postponed vacations after their bosses retreated to their constituencies or departed on junkets. Those staff workers remaining on the job smile more frequently these days with the pressures lessened. Their biggest problem during the between-session hiatus is playing host to visiting constituents in the boss' absence.

But things on Capitol Hill are not at a complete standstill. Many committees will hold hearings before the next session convenes.

Convention Calendar

1961

Association	*Date*	*City*	*Hotel*
South Carolina	Oct. 23 and 24	Clemson	Clemson House
Virginia	Oct. 26 and 27	Roanoke	Roanoke
Oklahoma	Nov. 8 and 9	Oklahoma City	Skirvin
Alabama-Mississippi*	Nov. 13 and 14	Birmingham	Thomas Jefferson
Florida	Nov. 26, 27 and 28	Miami Beach	The Carillon
North Carolina	Dec. 4 and 5	Pinehurst	Carolina

1962

Minnesota	Feb. 25, 26, 27 and 28	Minneapolis	Radisson
Kentucky	Mar. 6	Lexington	Phoenix
Texas	Mar. 11, 12 and 13	Dallas	Sheraton-Dallas
Iowa	Mar. 19 and 20	Cedar Rapids	Roosevelt
Ohio	Apr. 3 and 4	Columbus	Deshler Hilton
Nebraska	Apr. 18 and 19	Omaha	Sheraton-Fontenelle
Wisconsin	May 8 and 9	Milwaukee	Plankinton
Indiana	May 9 and 10	Indianapolis	Claypool
Kansas-Missouri*	May 21 and 22	Kansas City, Kan.	Town House
Illinois	May 24 and 25	Springfield	Abraham Lincoln
Pennsylvania		Bedford	Bedford Springs
New York	June 11, 12 and 13	Whiteface	White Face Inn on Lake Placid
California	June 13 and 14	San Francisco	Jack Tar
Washington-Oregon*	June 21 and 22	Portland, Ore.	Sheraton

*Joint meeting

FCC To Be Grilled On Satellite Plan

Sen. Russell Long (D., La.) one of the chief worriers over the administration's private ownership policy on space communications satellites, will have the FCC on the carpet before his Antimonopoly Subcommittee on Nov. 8 and 9. The FCC-appointed ad hoc committee of 10 international common carriers is scheduled to submit its report to the commission on Oct. 13. Long postponed the FCC's appearance before his Subcommittee—originally scheduled for Oct. 17—to give it time to study the report from the "Big 10" and to give interested parties an opportunity to comment on the report before the FCC testified.

The National Association of Railroad & Utilities Commissioners at its recent convention in Atlantic City urged that control of space communications be placed in the hands of this country's private communications industry. The appeal was contained in a resolution adopted at the association's 73rd annual meeting. It stated that the common carrier industry should be encouraged to provide satellite communications "in the traditional American way, under regulation, without government subsidy."

The NARUC said that private responsibility for space communications would be consistent with past national communications policy which "has resulted in the most extensive and efficient communications system in the world." Private responsibility for space communications "will result in the earliest possible realization of a compatible working system and will best demonstrate to the entire world the vitality of the free enterprise system," the association declared in the resolution.

The NARUC contended that "satellite communications affords this nation a most promising opportunity to assert leadership in the field of space endeavors and can therefore have a profound effect upon the nation's prestige.

"The communications users of this nation can benefit immeasurably from prompt establishment of a world-wide satellite system.

"The United States regulated common carrier industry has had years of experience in cooperating with foreign administrations in providing communications service of all types under sound government regulations and has

demonstrated both the capability and willingness to do the job without delay."

The association directed that copies of its resolution be sent to Vice President Lyndon B. Johnson, who is chairman of the National Aeronautics & Space Council, and to all members of Congress.

CENTO telecommunications contract signed

The Department of State recently announced the signing of a telecommunications project contract between the Radio Corporation of America and the International Cooperation Administration on behalf of the United States Government. The project eventually will link the three regional members of the Central Treaty Organization (CENTO), Turkey, Iran and Pakistan.

The signing ceremony took place in the office of Dr. D. A. Fitz Gerald, Deputy Director of Operations for ICA, who signed for the United States. Douglas C. Lynch, vice president of RCA, signed for the company. Among those attending were representatives of the three regional countries and officials of RCA, ICA and the Department of State.

This marked the start of actual construction on an undertaking which has been the subject of cooperative effort by the United States, Turkey, Iran and Pakistan for over three years under the sponsorship of CENTO. Four sovereign nations, in partnership, have worked together from the outset in determining the major features of a modern telecommunications system. The system is designed not only to provide communications between Ankara, Tehran and Karachi, but to tie in many other communities. It is designed to take account of existing and future branch lines along the route. The equipment will be owned by the three host countries and be operated integrally with their existing telecommunications systems.

The project is also a partnership venture in the financial sense. The host countries are making large contributions which include providing all of the necessary buildings, several hundred miles of access roads, and cash to cover the local-currency costs of construction. The $16,490,000 construction contract is financed largely by the United States, naturally—but, in part, by the host countries.

The United States is providing all foreign exchange costs for manufacturing and equipment, and for its installation and testing.

The 3,000-mile CENTO telecommunications system will be one of the longest microwave systems in the world. When completed, it will contribute to the realization of one of CENTO's principal economic objectives—the improvement of communications between the countries of the region.

FCC authorized new transocean cable

The first transpacific ocean telephone cable, which will connect Hawaii and Japan, has been authorized by the FCC. It will extend 5,500 miles via Midway, Wake and Guam to furnish telephone and telegraph common carrier services.

The commission's cable landing, construction and operating authorizations went to the American Telephone & Telegraph Co. The cable will be laid by AT&T which will operate portions of it jointly with Kokusai Denshin Denwa Co., Ltd., of Japan. AT&T estimates that its share of the cost of the project will be 55 million dollars.

The Hawaii-Japan telephone cable will link with the present AT&T telephone cable from the United States mainland to the new island state. It will later connect with a submarine telephone cable between Canada and New Zealand and Australia which will be constructed by those countries.

The Hawaii-Japan telephone cable will have a capacity of 128 two-way voice grade channels, each having a bandwidth of about 2.8 kc. The core will be a central conductor consisting of a steel strand with a copper wrapper insulated with a water-impervious material (polyethelene) and surrounded by a return copper conductor. It will rest on the bottom of the sea and be armored in shallow shore waters for protection against fish trawling, ship anchors and other possible damage.

The telephone cable from the United States mainland to Hawaii is now the only extensive Pacific cable other than the telephone cable connecting the continental United States with the state of Alaska. Common carrier communication between the United States and the western Pacific is at present being provided entirely by radio circuits.

The FCC also approved the transfer of a cable landing license from Point Roberts & Gulf Telephone Co. to the British Columbia Telephone Co. It involves two submarine cables from Point Roberts, Wash., to the international boundary lines in Georgia Strait, there connecting with Vancouver and Victoria, B.C.

Suspends AT&T revised developmental line-switched service tariff

In other action, the commission suspended until January 8, 1962, proposed revised tariff schedules of the American Telephone & Telegraph Co., expanding the scope of its original developmental line-switched teletypewriter service, tariff FCC No. 252, to obtain additional experience in preparation for the full-scale wide area data service (WADS) offering, and to meet the needs of the Boeing Co. and United Airlines, which have requested developmental line-switched teletypewriter service.

The revised tariffs, which had been scheduled to become effective Oct. 8 are subject to the investigation ordered by the commission on June 7 concerning the lawfulness of regulations and charges proposed by AT&T in its original Tariff No. 252, which was suspended by the commission on June 7.

Lebel promoted

Dr. Arthur Lebel, who has been assistant chief of the State Department's Telecommunications Division since 1958, has been named acting chief to succeed Francis Colt deWolf. Mr. deWolf was promoted to special advisor to the department's Office of Transport & Communications.

Dr. Lebel, a lawyer with a doctorate in juridical science, has been involved with telecommunications matters since joining the Department in 1930. He joined the Telecommunications Division in 1944, and before being named assistant chief, was head of the branch responsible for safety, international wire communications, and foreign broadcasting service.

Dr. Lebel has served on U. S. delegations to more than 60 international conferences.

Mr. deWolf, who joined the State Department in 1922, has headed the Telecommunications Division since 1944. From 1938 to 1943, he served in the division of international communications.

Mr. deWolf has represented the United States on the International Telecommunications Union's administrative council since 1948, and was chairman of the United States delegations to the Moscow conference in 1946 and the Geneva conference in 1959, and represented the United States at the Buenos Aires Conference in 1952.

FCC Commissioner warns of "winds of regulation"

FCC Commissioner Rosel H. Hyde, speaking before the Tennessee Association of Broadcasters, expressed his concern at the winds of regulation that are blowing in Washington. The Idaho Republican said that broadcasting reached its full flower under a free enterprise and competitive environment, but now there are stirrings in Washington that the FCC should establish program guidelines for broadcasters.

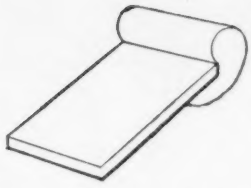
"By specifying program guidelines for the programming of broadcast stations," Mr. Hyde explained, "the commission is assuming responsibility properly residing within the licensee and, by such assumption, improperly places itself in the position of being held responsible by the public in matters involving creative effort, taste, and opinion, with which it could be helpless to deal."

Let's make sure the "time-honored" regulatory approach has failed, Mr. Hyde said, before accepting a new path that will make inroads on the "established free enterprise, censorship-free system of broadcasting."

Mr. Hyde said the instrument to be used is better programming, the most

(Continued on page 52)

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

WE HAVE NOW HAD correspondence with a total of nine teen-age telephone experimenters from various sections of the country. However, we have never had the pleasure of meeting any of them until recently when David Peterson, of Delphi, Ind., visited the Nation's Capital with his parents and sister.

David started his experiments with two telephones back in 1957. He then progressed to four telephones and built six different manual systems and now has his seventh system which is dial. This system serves a total of 12 stations located at various points on the 832-acre Peterson farms. He maintains over a mile of outside line. He can also listen to radio broadcasts from any station, dial a code to determine the liquid level in a tank or turn a light on and off. Features now in the planning stage are monitoring the barns and controlling the operation of a fuel pump by a few pulls of the dial.

In 1959, David exhibited a small cordless manual system at Purdue University. He received as a prize, first alternate for a U. S. Navy cruise. The following summer he exhibited the same system at the County Fair under 4-H sponsorship. There he won Champion rating and a chance to take his project to the Indiana State Fair where he won first place.

The cost for materials used in the present dial system was slightly over $50. Books and magazines on telephony cost about $50 and he expended about 1200 hours of labor. This information was also supplemented by numerous visits to nearby telephone exchanges and visits with telephone engineers. Telephone equipment manufacturers and operating telephone companies have been most generous in providing discarded equipment which David has utilized to advantage in his experiments. These companies are to be commended for their efforts in helping an interested teen-age experimenter get a proper start in the fascinating game of communications.

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David entered Purdue University this fall and he was concerned that his family might not be qualified to properly maintain the system during his absence. However, he prepared a list of troubles and their probable causes. With this help he is in hopes that they will be able to maintain communication and keep the relays clicking.

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Down in Fort Lauderdale, Fla., a local businessman afflicted with paralysis and able to move only his fingers queried Southern Bell Telephone & Telegraph Co. as to whether they could install a mobile telephone in his mobilized wheelchair. The Bell had never heard of it being done, but stated if it could be done, they would do it.

Because of its lighter weight and lower current requirements, a General Electric transistorized set was used. The set was operated by a two-position switch, permitting the user to talk or mute the speaker by changing the position of the switch. A microphone was mounted on a gooseneck at the top of an equipment cabinet located on the rear of the wheelchair. A speaker was used in order to receive transmission.

The subscriber using the wheelchair and mobile telephone has a job which requires traveling in and around the Fort Lauderdale area. He can operate the mobile telephone in his office or outside within a 25-30 mile area.

The subscriber using this unique service had the following to say in thanking Southern Bell for its special efforts in his behalf: "'I can go anywhere, stay by myself, and when I want* someone to pick me up, all I have to do is to call by mobile telephone and they will come and get me. It is a wonderful aid and additional item of independence for anyone who is operating out of a wheelchair."

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The replacement of more than 4 miles of traction cable used to operate the British Columbia Telephone Co.'s Dog Mountain aerial tramway near Hope, has been completed with the help of a still-powerful World War II Sherman tank.

With its steel body acting as an anchor, and its armor and turret replaced by a winch, the war surplus tank was used by a Wright's Canadian Ropes Ltd. crew in pulling 22,000 feet of ¾-inch cable into place and removing the old cable. The total weight of the new cable is 11 tons.

The 10,300-foot-long gondola-type tramway provides the only access to the telephone company's microwave station through which television programs and the bulk of long distance telephone conversations are relayed to and from eastern Canada. It is one of 139 such towers or relay points in the sea-to-sea trans-Canada microwave system.

The telephone company's microwave maintenance men reach the tramway's lower terminal at the foot of Dog Mountain by crossing the Fraser River in a Fiberglas boat and riding the remaining mile and a half of company-maintained road in a Jeep truck.

The tramway operates like a clothesline in that the unbroken span of cable travels in a horizontal plane around a fixed pulley at the top of the 4900-foot mountain and around an electrically driven pulley at the lower terminal. An open freight "skip"—which is replaced by a 12-passenger gondola during the winter months—is attached to the traction cable where the ends meet. These cars shuttle back and forth along an overhead stationary track cable, 1⅜ inches in diameter.

The Dog Mountain tramway has the greatest vertical lift in North America—4525 feet in 10,300 feet—and at one point during its scenic 2-mile run to the summit, the gondola is 400 feet above the ground.

The traction or clothesline cable has a breaking strength of 31 tons and an approximate life span of five years. The track cable has a breaking strength of 98 tons and a life span of about 20 years. Replacement of the traction cable was accomplished in two weeks at a cost of nearly $20,000.

"Cross Talk"

The Eiffel Tower is described as the Empire State Building after taxes.

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It is claimed that never in the history of our country have we had more equipment for saying something, and yet had less to say.

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A genius is defined as a man who can do everything but make a living.

Front view of the new central office building at the Stanwood, Wash., exchange of the West Coast Telephone Co. It is of concrete block and poured concrete construction. The rear wall of the building is of transluscent structural wall panels (Fiberglas) which may be removed for future expansion.

Trends in Telephone Buildings

Economy in cost and maintenance
Pleasant appearance to public

By RAY BLAIN

THE PROPER housing of central office switching equipment should always receive careful consideration by operating telephone companies. Not only is it important that equipment be housed in such a manner that it can be properly and economically maintained, but buildings should also be efficient in design and economical in cost as they represent one of the big money items of the industry.

The Bell System constructs over 1,000 buildings annually (nearly 2,000 in one recent year), ranging in size from large skyscrapers to small community dial offices and repeater stations. The Bell System is actually America's biggest private builder. They have spent over one billion dollars in buildings in the past five years.

Biggest Steel User

The Business and Defense Service Administration of the U. S. Department of Commerce reports that about 182 million dollars was spent in 1960 by the domestic communications industry for building construction. This represents an increase of about seven million dollars over 1959. Furthermore, the telephone industry uses more steel for building construction than any other single industry.

If the telephone industry expects to get its money's worth, these buildings must be carefully and properly designed. Equally important, however, they must be pleasing in appearance, blend well with surroundings and the community. Then, above all, they must be acceptable to the public, for the impressions made by buildings form a considerable part of the public's opinion of any telephone company. Good design requirements will prevent the eccentric experiments of some building architect who might attempt bizarre architecture. The most important requirement of good architecture is that it be adapted to the surroundings and not reflect luxury. It can and should be the outward and visible sign of the telephone company's con-

New central office building erected at Webster N. Y., by the Rochester Telephone Corp. Good example of modern design which fits into surroundings.

Example of southern architecture is this new building of the Indiantown (Fla.) Telephone System, which has grown 500 per cent since 1957. Houses equipment to initially serve 500 stations and ultimately 6,000 stations.

Among the many new buildings of the General Telephone Co. of Indiana is this one at Hobart, Ind.

This central office building of the Rochester (Ind.) Telephone Co. was built in 1938, but was doubled in size in 1957 when the exchange was converted to dial. It is of a conservative design which harmonizes with the community in which it is located.

This new headquarters and central office building of the Standard Telephone Co. of Cornelia, Ga., gives an interesting design for a corner lot, with along-the-street parking facilities on both sides of the property.

sideration of public approval.

Economic Design

The telephone business, being a regulated public utility, should—if for no other reason—avoid any appearance of expensive elaboration. Actually, it has been learned that modern architectural ideas and materials lend themselves ideally to the need of economy, providing good judgment is used. It has also been learned that good building design costs no more than inferior design and that many of the better appearing buildings are, in the long-run, less expensive.

In general, telephone buildings are not easy to design. They often present difficult architectural problems as efficient equipment layouts tend toward rigid rectangular shapes, the proportions of which have little relationship to usual architectural concepts of mass and form. This applies especially where a building is to be constructed in a residential area.

Down through the years, it has been the accepted practice that all telephone buildings have at least one window per bay. This is not a reasonable requirement today as we do not generally depend on windows for ventilation. In fact, the majority of our telephone buildings would be more functional if we had less windows in the equipment areas. Actually, all that is required is enough to meet the fire marshall's requirements.

Should be Sealed

Other than this requirement, equipment rooms that are air conditioned do not require windows. If windows are provided they should be sealed. Further, it has been learned that architects welcome the opportunity to get away from the "one window" concept. This permits them to enhance the appearance of buildings by placing the window areas in lounges or lunch rooms where employes may enjoy the view while they are relaxing on their lunch hour, or in office areas where some window area is always desirable.

Architects have another opportunity to relieve the massive appearance of equipment buildings that have unusually tall story heights because of the use of high equipment frames. In the Bell System's recently standardized packaged equipment buildings, the equipment area has standard bay dimensions, but the space for associated facilities such as power room, mechanical plant, toilets and lounge areas may be in wings with low-ceiling heights to relieve the massive equipment areas.

Future Growth

Another complication in the architect's treatment of telephone buildings is that the ultimate will, in general, be considerably larger than the original unit. Buildings must, therefore, be designed for expansion, either laterally or by the addition of more floors as the service requirements of the locality increase. The final structure may be two to four times the size of the original portion. This presents problems of providing acceptable architectural treatment of the original building, the ultimate, and, in some cases, various intermediate stages.

The forecasting of future building requirements during the past few years has proved to be extremely difficult. Not only have communities grown faster than normal, but technical developments also require new equipment and additional space. The forecasting of building space must, however, always receive all possible consideration. A building of ample size, or planned for growth, will cost more initially, but a building that is too small and which cannot be expanded economically will, in most cases, cost far more eventually.

10-Year Future Growth

It is necessary to estimate not only future growth of the community for a period of at least 10 years, but also to consider the possibility of future technical developments that may require additional equipment space in the buildings. Just as we have observed the use of carrier and VF repeaters, for example, increase tremendously in recent years, it is likewise possible that developments in data transmission alone may require considerable space in future equipment rooms. This special equipment all requires the installation of frames which in many cases have not been considered in the originally engineered plans. It must be admitted, however, that these requirements are most difficult to forecast. Perhaps rather than attempt to do so it will prove more desirable to plan buildings for convenient and economical expansion.

These special and unusual requirements do, however, develop a collection of restrictions that the architect must carefully consider and yet come up with a good design. Because of these special requirements, architects must be given all possible freedom if they are to be expected to come up with a good design at a reasonable cost.

Architects' Services

To obtain satisfactory results, telephone companies will be well advised to obtain professional talent to plan and design all new buildings. Private engineers and architects throughout the country will be found available and qualified to do this work. As a rule, it will not prove economical for any telephone company to carry architects on its payroll.

The services of a professional architect are considered necessary in the design of even the smallest building. We believe that all will agree that it would prove foolhardy to treat even a mild case of pneumonia without a doctor. Likewise, "do-it-yourself" architecture on even a small building is certain to prove poor economy. Operating companies can also reduce architect fees by standardizing as much as possible the plans and specifications for equipment buildings. In most buildings of this type, about 60 per cent of the over-all plans may be basically identical.

Zoning Requirements

Our neighbors always have a better opinion of us if we keep within the spirit, as well as the letter, of protective measures such as zoning ordinances. It is always considered a good idea for telephone companies to avoid the request for exceptions unless they are absolutely necessary. Good judgment in the selection of sites and ingenuity in avoiding the need for exceptions will always be repaid in better community relations. In some areas, the zoning ordinances permit telephone exchanges within the commercial districts only and exclude them from all residential areas. Often, however, a new wire center must be located in a residential neighborhood and in this case an exception to the zoning ordinance is unavoidable.

Due consideration should also be given to the fact that in most areas, expansion is presently taking place laterally rather than vertically in the sense of shopping centers and residences. Ranch type houses on large lots form the pattern in sub-divisions on expanding perimeters of towns and cities. New shopping centers on the edge or on the outside of the city limits are the order of the day rather than multi-story downtown buildings. Modern industrial plants are, for the most part, located a mile or two, or more, from the city limits. This all points to rapid and sometimes unpredictable shifts of "wire centers".

Operating telephone companies may be inclined, in some cases, to overlook the fact that the terminal-per-station concept means that 10,000 stations, not lines, is the cutoff point for a central office. With present-day traffic load and line fill, this means that 5,000 to 6,500 lines is the point at which a new office will be required. It is highly probable that when this point is reached there will be a more logical location for the new office than in the old building.

Off-Street Parking

Off-street parking is another zoning requirement that often necessitates arriving at an understanding with municipal officials as to necessary needs. Off-street parking is usually calculated in proportion to either the floor area of the building or its estimated population. Parking requirements may

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Accounting for

OVERHEADS, INTEREST, TAXES

During Construction

By WILLARD F. STANLEY

DIFFERENT ACCOUNTING treatment is called for to get best results for telephone systems of various sizes and under various circumstances, in such accounting matters as:

Capitalization of construction overheads.

Capitalization of interest during conconstruction.

Capitalization of taxes during construction.

Large systems, with publicly owned common stock, benefit most by one accounting treatment, while small systems, without publicly held shares, do better with another. Furthermore, proximity of a rate proceeding affects the best accounting treatment for small systems.

Overhead construction expense consists of the salaries of officers and regular employes attributable to construction work. Interest during construction represents the assumed cost to the telephone system of the money used to finance new additions, applied to the period of construction. This item is customarily taken at from 5 to 6 per cent per annum as an over-all average of the cost of all funds involved, including equity money. Taxes during construction comprise taxes on additions under construction at the tax assessment date.

Advantage to Large Company

In the case of all three of these items it would usually seem to be definitely favorable to the large, publicly held telephone system to capitalize them as a part of the cost of the projects. This is because this accounting treatment not only increases the rate base to the extent of the amount so capitalized, but also results in a net increase in earnings available for the common stock to the same extent and thus tends to enhance the stock's market value.

It is believed that practically all large publicly held systems are now following the practice of capitalizing construction overheads and interest during construction. These systems are, therefore, familiar with the accounting techniques involved and with the benefits to be derived therefrom.

However, despite the fact that capitalization of taxes during construction is specifically permitted by the uniform system of accounts of the state utility commissions to the same extent as construction overheads and interest during construction, it is believed that relatively few large utilities of all types have followed this practice. Yet its results should be as relatively favorable to such utilities as capitalization of the other two items.

A discussion of the technique of capitalizing taxes during construction by such utilities is set forth at the end of this article.

Small Company's Interest

As to the small telephone systems without public ownership of their common shares, they are customarily interested in cash earnings rather than book earnings. An increase in book earnings which doesn't involve cash does them no good and increases their vulnerability from a rate standpoint. They are, however, interested in increasing their rate base, since this will improve their rate situation in the event of a rate proceeding.

As stated above, it is important to these small systems, in deciding the best accounting treatment for two of the three above-named items (i.e., overheads and taxes), to consider the likelihood of a rate case developing, and to endeavor to look forward and estimate when it might be reasonable to expect such a case to become active.

In addition to the proximity of rate proceedings, the accounting treatment of the above items in the case of small systems depends also, to some extent, on the degree of recurring annual expansion.

Accounting Treatment

Taking up first the matter of accounting treatment of construction overheads, let us assume a small telephone system with say $100,000 of net plant, an annual recurring expansion averaging around 6 per cent, or $6,000 and earnings, at 6 per cent on net plant of the same amount.

Next we must try to estimate the annual amount of construction overhead. This would represent the time spent (at regular salary rates) by company officers and other executives and by members of the bookkeeping and other clerical force in connection with the construction program.

It's difficult to estimate the proportion such overheads would bear to the $6,000 construction, but an assumption of 10 per cent might not be unreasonable. The allocation between construction work and operating expenses would be left pretty much to the discretion of the management. This would mean that earnings for rate purposes would increase by $288 a year, after giving effect to income taxes, if such overheads were capitalized.

On the other hand, if this course were followed, each year depreciation and rate base would increase by $45. If a rate case were expected to occur in say three years, the accumulated

increase in depreciation and rate base would be $135, which, deducted from the $288 of net increased earnings, would make the equivalent of a net increase in earnings of about $153 for rate purposes, or about 2.5 per cent of the $6,000 of earnings.

When Is Rate Case Expected?

So, if a rate case was expected in the reasonably near future, the small system would be better off not to capitalize overheads but to deduct the entire salaries as a part of operating expenses.

On the other hand, if a rate case were not reasonably to be expected for a long period, say 10 years, by the end of that time the accumulated increase in depreciation and rate base would have reached $450, or $162 more than the $288 of higher income, with the result that there would be, at that time, the equivalent of a net reduction of rate-making earnings of $162, or 2.7 per cent of the $6,000 earnings. Therefore, with this expectation as to future rate cases, the small system would do best to capitalize overheads.

Now let's suppose a small system makes a very substantial addition to its properties in a single year, say $36,000 or 36 per cent of net plant. As this would be a non-recurring expenditure, the small system would be better off to capitalize the overheads incident to this heavy construction program.

Thereby it would increase depreciation and rate base (and, therefore, reduce equivalent rate base earnings) to the extent of $270, or 4.5 per cent of the $6,000 of earnings.

The contrary would be true only if the system were, during the year involving the heavy construction, engaged in a rate case, so that the heavy increase in income for that one year, due to capitalization of overheads, would affect rate calculations. However, even in this case it seems doubtful that any utility commission would attempt to fix rates on the basis of earnings arising from a non-recurring heavy construction program.

The substantial increment to earnings from capitalized overheads would occur in the year of construction only, whereas the reduction in income due to increase of depreciation and rate base would continue into the future.

All of this is based on overheads of 10 per cent of expenditures. If the portion allocated to overheads were to be substantially increased, the figures would vary accordingly in both directions.

Interest Capitalization

Coming next to capitalization of interest during construction, we find the situation is different. Capitalizing this item does not result in reducing operating expenses, but rather in a special credit to income "below the line," under "Income Deductions" (usually entitled "Interest during construction credit").

This credit does not affect rate purpose earnings and accordingly capitalization of this item is to the interest of the small telephone system, if the amounts involved are enough to make it worth-while. Thereby both depreciation and rate base are increased and equivalent earnings for rate purposes are accordingly reduced, thus strengthening the system's rate position.

It is not usually the custom to capitalize interest during construction except with respect to items of property additions having, relatively, a reasonably high cost and which are readily identifiable. Otherwise the cost of the record-keeping could more than offset the advantage to be gained.

Recurring Expansion

Taking the example above of a $100,000 net plant system, with annual recurring expansion of $6,000 and the same amount of earnings, it might be assumed not unreasonably that $4,000 of the total construction would be capitalizable. It might further be assumed that the average period the construction funds would be employed in construction would be about two-thirds of the year.

With a 6 per cent per annum allowance for interest during construction, applied to $4,000 of additions, the resulting figure would be $240 of which two-thirds is $160; 3 per cent depreciation thereon (less income tax adjustment) or about 1½ per cent, plus 6 per cent for return on rate base would aggregate 7½ per cent.

Applied to the $160 figure, the result would be $12, which seems a meager figure. But after the lapse of 10 years this figure would grow to $120, or 2 per cent of the assumed $6,000 earnings. By that time, capitalization of interest during construction would have resulted in the equivalent of a 2 per cent decline in rate-making earnings through increased depreciation and rate base. It's well not to overlook even small amounts when they are in your favor.

All this applies to recurring annual expansion of 6 per cent. In case of a substantial expansion in a single year (36 per cent of net plant as assumed above), the benefit would immediately amount to $72 of equivalent decrease in rate-making earnings, or 1.2 per cent of the $6,000 of assumed earnings.

The principles affecting the accounting treatment of the capitalization of taxes during construction are the same as those with respect to capitalizing construction overheads.

Rate Case Expectation

If a rate proceeding is reasonably to be expected within a few years, it would be best not to capitalize taxes during construction. But it is probably advantageous to capitalize this item when a rate case is not reasonably to be looked for over a long future period—eight to 10 years or more.

The proportionate results will work out in either case the same as with capitalization of overheads—with adjustments, of course, for the lesser amounts which would usually be involved.

With $6,000 recurring annual expansion it might be a fair assumption that $3,000 thereof would be in progress on the tax assessment date and that taxes on that amount might be taken at an average rate of about 3 per cent. This would be $90 capitalized a year upon which 7½ per cent allowance for increased depreciation and rate base would aggregate about $6.75 or $67.50 after 10 years.

On this basis, the increase in income from capitalizing these taxes would run about $43 annually, after allowance for the tax deduction. However, it is important to note that taxes during construction may be capitalized only in those states which, by their law, call for taxing property in the course of construction.

In the case of a substantial single-year expansion, such as the 36 per cent assumed above, capitalizing taxes during construction would work out favorably on the same principles as in the case of capitalizing overheads, but with the amount of the former only about 15 per cent of the latter on the above respective assumptions.

Capitalization of Taxes

Reverting to the capitalization of taxes during construction by large telephone systems, with publicly held shares, which have not been following this practice, let us see what is involved.

The taxes capitalized are usually ad valorem taxes on the additions under construction, to the extent that they are erected or constructed on the annual tax assessment day. As stated above, such taxes are capitalizable only if the laws of the state in which the additions are situated provide for taxing property in the course of construction.

Some attorneys have held that in the case of such states it is not necessary, in order to capitalize these taxes, that the tax bill received by the telephone system segregate the amount of taxes on the property being constructed.

In such a case, they feel, the system would be justified in capitalizing a portion of the total tax bill equal to the proportion which the amount of the property under construction on the tax assessment day bears to the total amount of property of the system (completed and incomplete), in each case as shown by the system's books at the month-end nearest the tax assessment day.

If such a capitalization formula is used in these cases, it seems unlikely that objection will be made either by

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Regulated Industries Have Great Impact on National Economy

By ALEXANDER I. WARRINGTON, M.A.*

SOONER OR LATER, our economic system, at all levels, develops or degenerates into what the politicians want it to be. And, usually, the politicians care little about what the economic system is or what it is destined to be just as long as they hang on to their jobs which politics creates. The observation of these processes can be made locally, regionally, nationally and on the international horizon.

As far as the United States is concerned, it is becoming increasingly difficult to understand exactly how our economy should be defined. This makes it most arduous to predict very much in the way of destination. Recently, an economist predicted that we were on the road to bankruptcy, and that we could count on only about 16 years for survival.

One Reason for Automation

Has, for example, anyone had the courage to write the real story as to why stepped-up automation has become necessary in the office and the factory? And as to what still remains of the office and factory forces, do all of them make an effort to really earn the salaries they are paid? One has only to spend a little time with so-called office and industrial workers and it soon becomes clear that, for many, an eight-hour day consists of from 30 minutes up to about two hours of work. In this case, a person who draws $600 per month is receiving about $80 per hour for work actually performed. These exorbitant and rising rates have to be passed on to the consumers and taxpayers.

There are many persons who would like to put in an eight-hour day but they soon find themselves unable to do so. For example, all too many American offices today have become a den of incessant chatter that makes concentration and accuracy impossible of attainment. As for the blue-collar type of work, there are loud protests about automation taking jobs away, but nothing to encourage an honest day's work for salaries received.

These are some of the things that the economist probably had in mind when he predicted that our economy would collapse in or before 1977.

A Peculiar Policy

These conditions stem from a peculiar philosophy that it is all right to regulate industry, but there must be no regulation or discipline of the work force. As a result, something close to chaos exists in governmental and non-governmental offices today.

About all that will be attempted in this article is to briefly review some of the conditions that currently prevail under a system of regulated industry.

In discussing this subject, it is difficult to improve upon the statement which follows, called to the attention of this analyst by the American Telephone & Telegraph Co., and prepared by the National City Bank of New York:

"*What Are Regulated Public Utilities?* They are industries so tinged with the public interest that society has given them certain rights and imposed upon them certain obligations not granted to or required of the general run of competitive enterprises. They are usually granted certain rights such as occupation of streets and highways and certain powers such as the condemnation of private property. On the other hand, a regulated public utility is required to serve all applicants for service at established rates. It may not pick and choose as among customers. The companies operating in these industries are subject to regulation as to price and quality and in certain other ways. It is in this sense that we differentiate between regulated and non-regulated industry. The following industries are included:

"Transportation (rail, highway, water, air and pipeline).

"Communication (telephone and telegraph).

"Public Utilities (electric power, water and gas).

"Regulation, if done in the best public interest, assures that the products of these industries are available to all at the highest quality and at a reasonable price. In a free economy, direct competition performs this function among non-regulated industries by rewarding the fittest. In a similar way, regulation must not stifle but foster and reward the best service offered to the public by regulated industries.

"*Who Are Their Customers?* Everyone. And on many counts. The products of these industries are vital parts of our entire complex economic system.

"Regulated industries:

"(a) Provide *other industries* with some basic services (power, communication, transportation) without which the modern production methods would be inconceivable;

"(b) Furnish to *government* the services which are essential to its operation and vital to its defense;

"(c) Supply consumers with many of the necessities and conveniences of modern life which are often taken for granted but which materially contribute to our present high standard of living.

"This heavy reliance by business, government and individuals on the products of regulated industries is evidence of their direct impact on the national economy."

*Mr. Warrington is an Industrial Consultant of Baton Rouge, La.

Economy and Regulated Industry

The following table, which presents statistics for the year 1959, will clear up many questions as to the impact the telephone industry has on the national economy. If the entire telephone industry, instead of just the Bell System, is to be considered, an approximation can be arrived at by multiplying the figures used ("Bell System") by 1.2:

	All Corporations	*Regulated Industry*	*Regulated As Percent of All Corporations*	*Bell System*	*Bell System as Percent of Regulated*
Employes (Millions)	31	4	13	.6	15
Payrolls (Billions)	$147	$ 21	14	$ 3.0	14
Taxes-Inc. Excises (Billions)	$ 46	$ 7	16	$ 1.8	26
Share Owners (Millions)	12.5	3	24	1.6*	53
Invested Capital Gross (Billions)	$437	$100	23	$16.0	16
Plant and Equipment Expenditures (Billions)	$ 37	$ 12	32	$ 2.6	22

*AT&T Co.

Sources: The data in this report came from U. S. Treasury—"Statistics of Income," Department of Commerce—"U. S. Income and Output," and Bell System reports.

There were 57 million employes in all industries, including government. Corresponding payrolls totaled $233 billion.

Some Pertinent Observations

In summation, the table shows these pertinent facts:

(1) Regulated industries provide jobs for four million persons.

(2) They pay an annual tax burden of 7 billion dollars.

(3) The investment of regulated industries is more than $100 billion.

(4) Regulated industries are owned by three million stockholders.

At least six million families have a vital link in regulated industries, and all families are influenced by political and economic developments that affect the well-being of the regulated industries.

For the reasons listed, the economic health of regulated industries is the concern of a vastly greater number of people than might be apparent at first sight.

Impact of Regulation

Regulated industries touch on many facets of our national well-being. By following short-sighted policies, regulation can harm whole industries.

Therefore, among other things, regulation should recognize:

(a) That the purpose of regulation is not just to keep rates and profits down. The public—business or individual consumer—is entitled to a high quality of service which, however, cannot be rendered for any long duration without good earnings. Only enterprises operated by government itself —postal service, etc.—can run deficits and tap the public till or compromise on quality.

(b) That the combination of low rates and high quality beyond a proper economic balance cannot be enforced by government edict. The investor—individual or institutional—expects a fair return or he will invest his money elsewhere. Sensitivity of the investor to a fair return has been well demonstrated recently in connection with the financing activities of the Federal Government.

(c) That regulated industries are not exempt from the economic pressure of competition. Some compete directly. All of them compete for the consumer's dollar and against alternate ways of spending. In addition, unsound government subsidies and cream-skimming competition approved by regulating commissions have hampered some regulated industries beyond the bounds of normal free competition.

(d) That management efficiency cannot overcome all handicaps which regulation might impose. A compulsory cut in rates at the first sign of improved profits has a deadly effect on the desire of people to work for new improvements. The sure way to kill corporate initiative is to tie the business down so there is no incentive to get up.

Acknowledgement: This article was prepared with the assistance of the statistical department of the American Telephone & Telegraph Co.

Hawaiian Telephone Offers Stock to Holders, Employes

The Hawaiian Telephone Co. is offering 606,739 common shares to its stockholders and 60,674 to employes, at $17.50 per share, it was announced on Oct. 3. Kidder, Peabody & Co. Inc., heads the underwriting group.

The offer to shareholders is on the basis of one share for each seven held of record Sept. 25. Subscription rights will expire on Oct. 17 (TELEPHONY, Aug. 26).

Hawaiian Telephone noted that these shares offered will participate in a dividend it expects to pay on Dec. 12, to shareholders of record Nov. 23.

Operating revenues in the 12 months ended May 31, were $26,339,831, and net income, $3,865,724, equal to 81 cents a common share.

For the year 1960, revenues were $24,939,331, compared with the prior year's $21,564,527. Profits were $3,485,035, or 75 cents a share in 1960, compared with $2,604,266, or 63 cents, in 1959.

Hawaiian Telephone will use proceeds of this latest offering to help finance a 1961 capital expense program budgeted at 21 million dollars, of which 6 million dollars will be spent to increase its investment in the Hawaii-Mainland telephone cable from 15 per cent to 35 per cent.

Capitalization on May 31, adjusted for the current sale, included 34 million dollars in first mortgage bonds; $5,224,000 of debentures, 987,746 shares of preferred stock, in six series; and 4,912,159 common shares.

Telephone Man's Son Heads Dr. Dooley's Medico Group

Dr. Verne E. Chaney Jr., son of Verne E. Chaney, long-time and retired executive of the former Gary group of operating companies, is giving up his medical practice in California to become the new head of Medico in Asia.

Mr. Chaney Sr. revealed his son's activity with Medico in Asia to the editor of the Automatic Electric *News*.

Medico is the program and organization founded by the late Dr. Tom Dooley who died of cancer on Jan. 18 this year.

The organization's doctors and nurses have as their aim, "training, teaching and treating."

Dr. Chaney, while touring Southeast Asia, did the ground work for medical programs in four more countries. These are the Tibetan plan in India and others in Afghanistan, Burma, and Hong Kong.

American surgeons in the Hong Kong Program will be flown to the colony to teach Chinese doctors how to transplant corneas. An international eye bank has already been established.

Dr. Chaney and his associates are establishing a 70-bed hospital in Kabul, Afghanistan. They feel it will be a Free World showcase of American medicine.

Mr. Chaney Sr. who now resides at 1088 Lanot Lane, Pebble Beach, Cal., states, that in addition to his retirement activities, he is participating in fund raising for Medico.

MIND YOUR OWN BUSINESS

Here's a personal file of stimulating ideas; little known facts and problem solvers

By TED POLLOCK

DEADLINES GET THINGS DONE. At one time or another, everybody finds his work-load distressingly heavy. Chores mount. Confidence nose-dives. Panic sets in.

One solution: *Set time limits on your tasks.* Tell yourself, for example, that you will write that long-overdue letter by 4 p.m. . . . read those reports before lunch . . . make that telephone call before your working day is over.

There are three good reasons for setting deadlines: (1) You challenge yourself—and consequently do your best to "save face." (2) You are being affirmative when you say to yourself, "I will write that memo by 3 p.m." You are really expressing faith in your ability to do so. And it's always easier to do what you know you can do. (3) You alert your body. The knowledge that a certain task must be accomplished by a specified time alerts your body to prepare itself for the job at hand. Even if the assignment is mental, your body responds by sending more blood—and oxygen—to the brain.

But keep your deadlines realistic. Some suggestions:

• *Allow sufficient time for fact-gathering.* Many tasks require specialized knowledge: Reports must be read, people consulted, letters exchanged. Take these preliminary steps into consideration when establishing your deadline.

• *Don't forget the tools you will need.* Whether the job calls for paper clips or power tools, remember the time it will take to assemble the proper equipment.

• *Mishaps can upset schedules.* An emergency meeting . . . a traffic jam . . . a head cold—any of a number of things can upset the best laid plans. It's good planning to add 10 per cent to any time limit—just in case. If those mishaps fail to materialize, it's so much gravy.

• *Interruptions cost time.* Telephone calls, visitors, "little things"—all can toss a deadline for a loss. Unless you've already found Shangri-La, make allowances for these petty time thieves.

• *Your supply of energy varies.* We all experience bursts of energy and short circuits. On a day when you *know* you're clicking, you can shave your deadlines, confident that you will meet them. On "off" days, give yourself leeway.

By thus keeping your time limits realistic, you will avoid the doing man's arch-enemy, "deadline jitters," that unreasoning jumpiness that can paralyze your faculties and triple the difficulty of any job. A deadline, after all, is like a suit: Too tight or too loose, it doesn't allow a man to show himself at his best. But carefully tailored, it flatters, builds confidence and is supremely practical.

Overweight? Try The "Pinch Test"

Suspect that that bulge isn't all muscle? Here's a simple, reliable way to *see* whether or not you are overweight: Take a deep pinch of skin just over your lower ribs (straight down from the arm pits) between thumb and index finger.

If the distance between the thumb and finger is greater than one inch, there is probably an excess of subcutaneous fat. In short, sir, you're carrying around too much *you!*

Better accept the brutal fact: You're taking in more calories than you're using up. The remedy (in 999 out of 1000 cases)—eat a little less.

FOUR WAYS TO DEVELOP CHRONIC ENTHUSIASM. Some years ago, Frederick Williamson, former president of the New York Central Railway, was asked what he thought was *the* secret of success. This is what he answered:

"The longer I live, the more certain I am that enthusiasm is the little recognized secret of success. The difference in actual skill and ability and intelligence, between those who succeed and those who fail, is usually neither wide nor striking. But if two men are nearly equally matched, the man who is enthusiastic will find the scales tipped in his favor. And a man of second-rate ability *with enthusiasm* will often outstrip one of first-rate ability *without enthusiasm.*"

If you ever find your own enthusiasm for your work waning, try these tested antidotes:

• *Give yourself a pep talk.* Literally. Look in the mirror and talk to the man you see. Tell him that he hasn't realized one-tenth of his potential. Inform him how lucky he is to have good health, a good job, a loving family. Remind him how thrilling it is to be alive in the 20th century amidst the daily miracles he takes for granted. Your remarks will really be addressed to your subconscious mind, which is most susceptible to suggestion. And

nothing—not the laws of the land, not your boss, not your wife—can make you obey the way your subconscious can.

• *Learn all you can about your job and how it fits into the "big picture."* Many men feel like unimportant cogs in a giant machine simply because they don't understand the ramifications of their jobs. A riveter in an airplane factory helps keep his country strong. A salesman helps people enjoy the good things in life, keeps the wheels of the nation's industry spinning. Understand how much you are really doing and you can't help feeling enthusiastic.

• *Associate with enthusiastic people.* It is almost impossible to be enthusiastic amidst people who drag their feet and their minds around the dull routine of daily duties. But mix with men who are excited about their work, interested in the world and its future—and some of their enthusiasm is bound to rub off.

• *Act enthusiastic.* Some years ago, psychologist William James advanced a startling new theory: He said that emotional experience is simply the perception of bodily changes. People had always thought, for example, that (1) you meet a bear, (2) you are frightened, (3) you run. James said this was wrong; the correct sequence is (1) you meet a bear, (2) you run, (3) you are frightened. In other words, *you don't run because you are afraid; you are afraid because you run!*

To support his theory (now widely accepted), James claimed that unless you assumed the postures typical to an emotion, you could not experience the emotion. That is, if a situation calls for grief and instead of slumping you hold your head high and stick out your chest, far less grief will come. On the other hand, if you assume the postures typical of a certain emotion, you will tend to have that emotion.

The moral for those seeking to generate enthusiasm? Tackle your job with zest, with an "I'm-going-to-enjoy-this" attitude and you will *be* enthusiastic!

PUT YOUR IDEAS ACROSS WITH "REVERSE ENGLISH." Trying to persuade someone to do something? Try the "penalty approach." Every idea contains a built-in "threat appeal." Find out what it is and you have a persuasive tool with which to open minds.

The consequences of *not* adopting your plan may be diminished profits . . . decreased efficiency . . . a personal loss of some kind. Whatever they are, point them out to your listener and he is bound to consider your plan with a view to adopting it.

Some examples of "citing the penalties":

"You wouldn't want to lose that customer, would you?"

"Unless we order now, we'll have to pay the higher price."

"Without an extra man on the assembly line, production will fall behind schedule."

However, be absolutely sure that the facts back up your "threat." Otherwise, you'll simply earn a reputation as an alarmist. The word: Caution.

HOW TO DETECT COUNTERFEIT BILLS

Compare a suspected bill with a known genuine bill of the same denomination. Note, especially, these features:

Portrait: Genuine is sharp and life-like. It stands out from the oval background which is a fine screen of cross-ruled lines. Observe the eyes, which are clear in the genuine, usually blurred in the counterfeit. The counterfeit portrait is dull, smudgy or unnaturally white and scratchy. Background is dark with irregular and broken lines.

Seal: On genuine, the sawtooth points around rim are identically even and sharp. On counterfeit, the sawtooth points are usually uneven, blunt, broken off.

Serial numbers: Genuine numbers have distinctive style, are firmly and evenly printed in same color as the seal. In counterfeits, style is different, poorly printed, badly spaced, uneven. Color may be too light or too dark.

Paper: Genuine bills are printed on distinctive paper containing very small and crinkly red and blue threads. Most counterfeits are printed on plain white paper.

If you get a counterfeit bill, do not return it to the passer; try to delay him with some plausible excuse, then telephone your police department or the Secret Service. Write down a description of the passer if he leaves before the authorities arrive. Try to get the license number of any automobile used by the passer and write it down.

HOW TO THINK LOGICALLY. We all like to think of ourselves as hard-headed, no-nonsense individualists who can see directly into the heart of a problem and act accordingly. Yet, many of the decisions we make are really the result of instinct or habit, *not* of true thought. As Mark Twain put it, "We get all the exercise we need from jumping to conclusions."

Far more profitable is thinking logically, acting on facts alone. The following rules will help you to keep your thinking *on any subject* strictly within the bounds of logic.

(1) *Avoid impulsive decisions.* Refuse to accept a solution until you have arrived at it step-by-step.

(2) *Eliminate emotions from your thinking,* so far as possible. That includes desire, inclination, bias.

(3) *Assemble all the facts* which have a bearing on the solution.

(4) *Test* every fact for its truth.

(5) *Examine carefully* any decision or solution which is too much in line with your own wishes. Life just isn't that easy.

(6) *Challenge your first solution.* Check every possible fact which tends to support or deny the solution.

(7) *Think "around" the subject.* This gives you a "cooling-off" period which serves as a defense against impulsive action.

(8) *Be willing to follow the facts alone,* even to a conclusion that may be disagreeable.

PAINT LIKE A PRO. If painting a room is among your autumn chores, the following tips should save you splatter—and splutter:

Hold your brush short, don't wear gloves. Paint first with one hand, then with the other, to avoid premature fatigue. Gloves do keep your hands clean, but they tend to keep slipping.

Using a roller? Don't dip it too deeply or paint will drip off. Don't roll too fast or you'll splatter. Use a large size, generously felted or furred; an undersized roller is as bad as a poor-quality brush.

No paint in your hair when you do the ceiling—if you cut a rubber ball in half, make a slit in the round part and slip it on the brush handle, "cup" upward.

When painting steps, paint every other one, then let dry. Paint the remaining ones later. In this way, the dry steps may be walked on without injury to the paint.

A large paper plate, glued to bottom of paint can, catches all drippings and provides convenient resting place for brush.

QUOTE OF THE MONTH. Framed in the offices of Arthur Godfrey in New York City is this sage observation: "If criticism had any real power to harm, the skunk would be extinct by now."

Bad Example

"Nothing wrecks an organization's morale faster than the familiar type of executive who comes into the office late, takes a three-hour lunch period, then leaves early for a golf-course 'business conference.' Even the office boy knows that business transacted in three hours over a lunch table can be handled in 15 minutes in the office."—J. PAUL GETTY, industrialist.

Brush control

Arbor specialists

Right-of-way clearance

Tree surveys

Line clearance

Experimental research

Tree trimming

Technical consultation

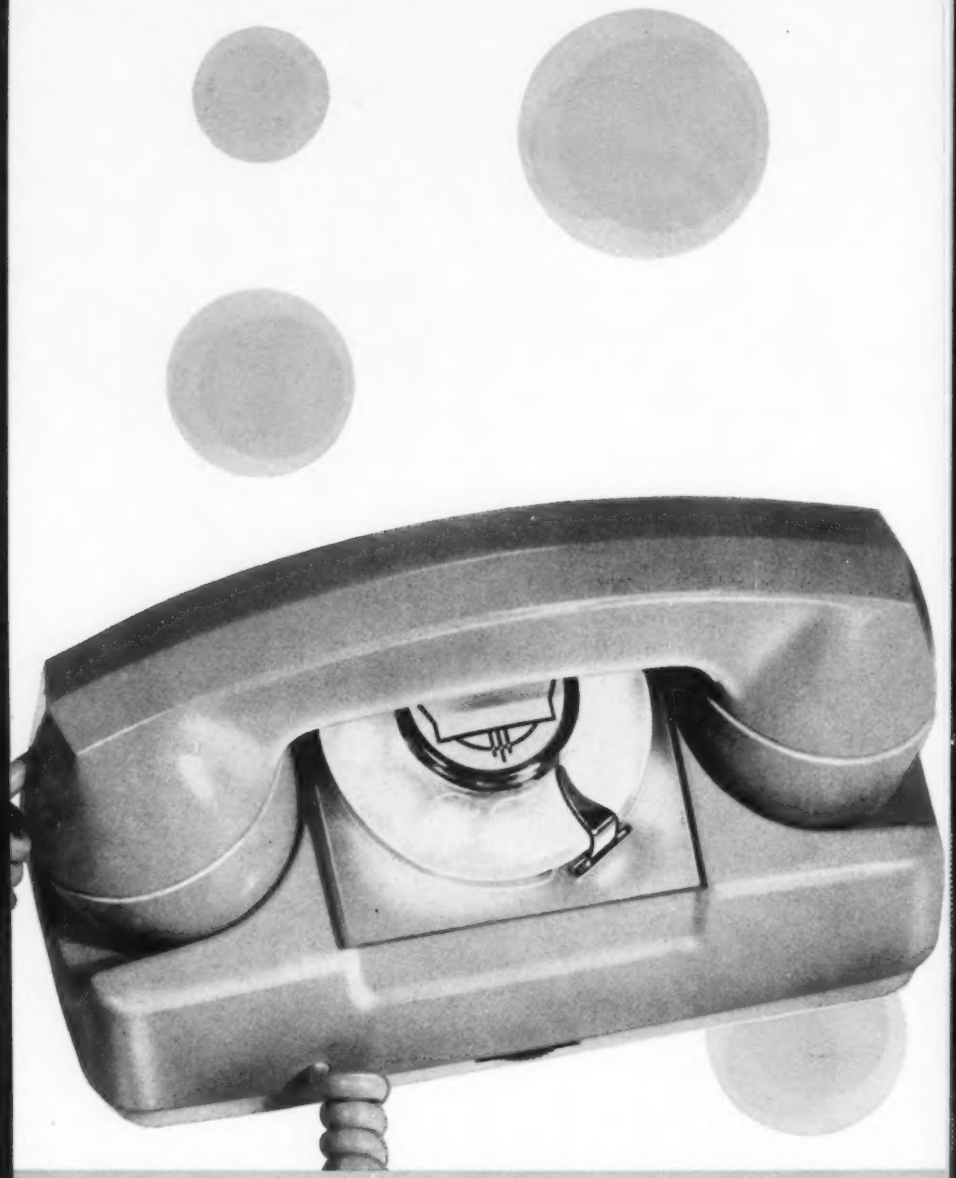
More than 13 years ago Bartlett successfully pioneered the use of the helicopter for shade tree spraying—an operation that was to lead the way, a few years later, to a new efficient method of control of woody plants along utility rights-of-way.

At first, difficult terrains presented unusual problems but gradually through research and experience, new equipment was developed and new herbicides and techniques perfected to overcome them. Today, Bartlett research in this important field is carried on continuously through college fellowships and at the Bartlett Research Laboratories.

If your right-of-way clearance, line trimming, brush control or tree survey requirements present a problem, we invite you to share our years of experience. This service is now available from Maine to Florida, and west to Illinois and Alabama.

BARTLETT TREE EXPERTS

Home Office, 2770 Summer Street, Stamford, Conn.
Research Laboratories and Experimental Grounds, Stamford, Conn.



the STARLITE telephone

Dial light shines years longer. Only Starlite has electroluminescent light... the lighting of the future. No bulb to burn out and replace every few months. And the dial light can be turned from soft to bright, or completely off, any time. Your subscriber chooses just the amount of light he wants.

Original design. It's smartly rectangular and less than half the size of a regular phone. Six sparkling colors: white, ivory, beige, pink, blue, turquoise.

Holds its place in use. Only Starlite has a rubberized cork pad covering the base. New soft-pull handset cord.

UL Listed. Starlite meets all the requirements of Underwriters' Laboratories. It's your assurance of Starlite's complete reliability.

Main station or ringing extension. Starlite can be either one with our new miniature ringer box. It's only 5¼" x 5¼" x 2⅛" deep. Available in all six Starlite colors.

helps you sell more extensions...

Starlite helps you put extensions in more homes. It's the phone that puts more $$$'s in your revenue. Easy to order. Just write Automatic Electric Sales Corporation, Northlake, Illinois

AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

*Trademark of Automatic Electric Company

ASK FOR YOUR FREE STARLITE SALES KIT

Promote the Starlite in your area with the help of this big Sales Kit. Contains newspaper ad mat, envelope stuffer, display posters, commercials, publicity release and mat, display ideas, promotion guide. Write for your copy.

Helpful Literature

COMMUNICATION BATTERIES—A new bulletin on their complete line of lead-calcium grid communication batteries has just been issued by the C&D Batteries, division of The Electric Autolite Co.

The well-illustrated 14-page catalog, T-532, gives complete details including weights, cell dimensions, electrical characteristics, discharge curves and rack data on C & D's PlastiCal, 25-year-life batteries. Request HL693.

•

LEAD-ANTIMONY BATTERIES—A new bulletin giving details on the company's standard line of lead-antimony grid communication batteries has also been issued by C & D Batteries.

The 16-page bulletin, T-533, is reported to give complete details including weights, cell dimensions, electrical characteristics, discharge curves and rack data on PlastiCell batteries. Request HL693A.

•

EMERGENCY LIGHTING UNITS—An illustrated technical handbook on Exide's line of automatic battery-powered Lightguard emergency lighting equipment has been published by Exide Industrial Marketing Division of the Electric Storage Battery Co.

The eight-page, two-color handbook offers technical descriptions of the equipment including batteries, chargers, relays, connections, lamps, and instrumentation lights and switches of the family of Exide Lightguard models A, M, T, D, and E. All models are described as providing emergency lighting automatically and instantaneously when normal electrical power fails.

A section on the 3-COE-7 and the 3-PWA-13 Exide wet-cell batteries—which have applications such as switchgear, supervisory control service, and various laboratory and industrial uses—gives full information on battery features. Request HL694.

•

SEMICONDUCTORS—A new brochure which describes the manufacture of high quality transistors, diodes, and other semiconductor devices has been made available by Sylvania Electric Products Inc., a subsidiary of General Telephone & Electronics Corp.

The 12-page illustrated booklet lists major steps in the design and manufacture of semiconductor products, and explains the role of research and testing.

The new booklet serves as a guided tour through the company's semiconductor production manufacturing facilities at Woburn and Wakefield, Mass., and Hillsboro, N. H. Request HL695.

•

ELECTRONICS PARTS AND PRODUCTS—The Allied Electronics Corp., a new, wholly-owned subsidiary of Allied Radio Corp., has released a 592-page catalog for 1962, largest in Allied's 41-year history as an electronic parts and products distributor to industrial and consumer markets.

New with the 1962 catalog is the special 13-page directory of semiconductors. Designed to facilitate ordering, this directory supplements the regular semiconductor listing, and presents transistors, diodes and other semiconductors in numerical order, with quantity price breakdowns.

Many pages are devoted to detailed listings of semiconductors, connectors, capacitors, resistors, relays, plugs, transformers, special purpose tubes, meters, cables, nuvistors, thermistors, counters, motors, power supplies, and other industrial electronic products.

Allied's Knight brand of ready-made electronic instruments and its customer-assembled Knight-Kit equipment are presented, along with products of other leading manufacturers. Request HL696.

•

CONTACT PROTECTION—Caig Laboratories Inc. has announced the availability of a six-page technical guide to properties and applications for its Cramolin products.

This bulletin, No. C-200, describes Cramolin as an anti-corrosive agent, cleaner and preservative, as well as a lubricant. It is said to increase contact reliability.

The guide gives a comprehensive review of the technical data on Cramolin products, as well as descriptive case histories. New product additions to the line are also mentioned. Request HL697.

•

MATHEMATICAL HANDBOOK—A new 64-page pocketsize handbook containing formulas and arithmetical rules has recently been completed by the Curta Co., distributors of miniature calculating machines.

This new handbook contains powers and roots, logarithms, decimal equivalents, circular arc tables, mensuration formula, weights and measures, conversion factors, etc. Also included in the handbook are business formulas such as profit and loss, markup, discount, simple and compound interest tables, etc. In addition, general arithmetical rules and formulas are found in the handbook.

The free booklet will prove to be a handy aid to anyone interested in calculating, states the publisher. Request HL698.

•

MULTIPLEXING SYSTEM—A four-page descriptive brochure giving specifications of the Type 46A Carrier System has been released by Lenkurt Electric Co. The company describes the 46A as a high-density, transistorized multiplexing system.

New design and packaging concepts have achieved a compact arrangement for the Lenkurt carrier system, which can handle up to 600 channels. The system can be combined on a functional or system basis to expand existing facilities, or to install new carrier paths. Channel bank, common equipment, or terminal equipment can be used with other systems.

The system complies with standard U.S. or CCITT requirements. Request HL699.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

HL693_____; HL693A_____; HL694_____; HL695_____;

HL696_____; HL697_____; HL698_____; HL699_____.

Name .....

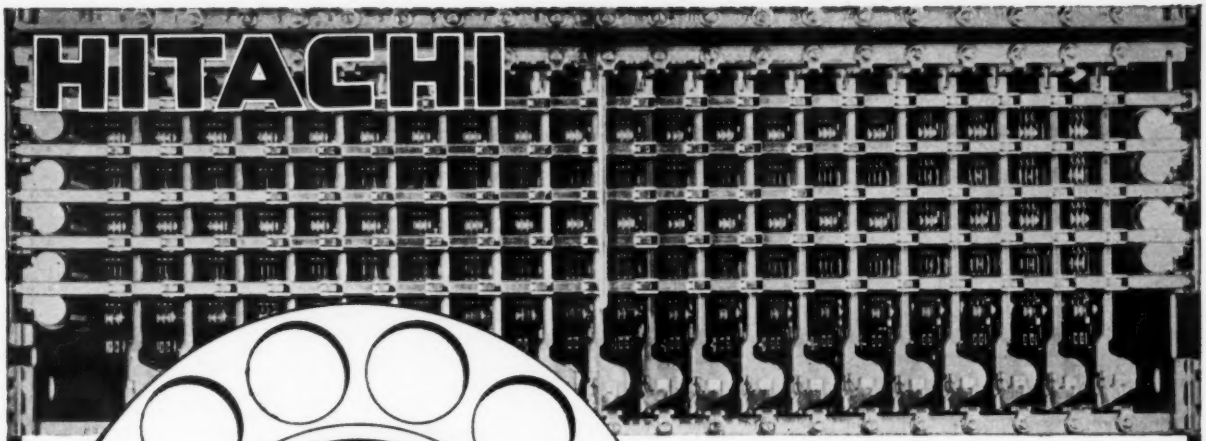
Company .....

Street .....

Town and State .....

10/14/61

HITACHI



For communication systems, call Hitachi

- Telephones and Switchboards
- Carrier-Current Communication Equipment
- Radio and Television Broadcasting Equipment
- Parts for Communication Equipment
- Analog and Digital Computers

Electric Wire and Cable

Extensive Hitachi experience with communications systems is reflected in the handsome Type HA-6 telephone set. Its light, compact and sturdy body is tough enough to withstand the shock of being accidentally dropped to the floor. Other outstanding features include high-fidelity transmission and reception, dust-proofed ratchet for ever-smooth dialling action, and clear and commanding bell-tone.

Today's telephone communications authorities are now employing the Crossbar System Automatic Telephone Switchboards in addition to the time-proven "step-by-step" Strowger System. They are finding that the Crossbar System offers many advanced facilities, fewer maintenance problems, minimized failures and longer service life, and that these features are making it ideal for unattended operations. Hitachi has devoted particular attention to the development of the Crossbar System, and consignees continue to report gratifying operating results.

Hitachi, Ltd.
Tokyo Japan

Cable Address: "HITACHY" TOKYO

Courts and Commissions

Columbia Asks PSC to Probe General of Mo. Operation

Attorneys for the city of Columbia, it was reported on Sept. 27, asked the Missouri Public Service Commission to investigate the General Telephone Co. of Missouri for alleged illegal operations. If the commission finds the General company to be operating contrary to Missouri law, the petition asks that the commission institute court action against the company.

General Telephone asked for rate increases in the 33 exchanges it operates in central and northern Missouri, and was granted the $400,000 increase, which has been in effect since July, 1959. However, Columbia and Centralia appealed the increase, however, which was later upheld by the Cole County (Mo.) Circuit Court (TELEPHONY, Aug. 20, 1960; May 13).

The question of legality of operation hinges, it is reported, on the fact that officers of the General company stated their executive offices and records are in Grinnell, Ia., though the commission record shows them to be in Columbia, Mo. Counsels for the city contend this is in violation of Missouri law, and that a utility must keep all records in the state unless the commission grants special authority to take them outside.

The attorneys also contend that the fact no Missouri director of General Telephone of Missouri, a subsidiary of General Telephone & Electronics Corp., holds a single share of the parent company's common capital stock is contrary to Missouri law.

GT&E Withdraws from FCC WATS Hearings

General Telephone & Electronics Corporation on Oct. 2 announced that it has withdrawn from participation in the current hearings being conducted by the Federal Communications Commission concerning the Wide Area Telephone Service (WATS) recently introduced by the Bell System (TELEPHONY, Jan. 14).

According to the GT&E announcement, the company is withdrawing from the hearings because all of the 27 domestic telephone operating companies in the General System are participating in the provision of the service, and have reached agreement with appropriate operating companies of the Bell System on division of revenues resulting from jointly rendered service.

The FCC hearings are studying the reasonableness of the WATS tariff, and are seeking to determine if the new service is in the public interest. GT&E also announced that it will not participate in comtemplated future hearings by the FCC concerning the division of revenues obtained from WATS.

Southern New England Files For Rate Increases in Conn.

The Southern New England Telephone Co. on Sept. 29 submitted a petition for a general rate increase to the Connecticut Public Utility Commission. The proposed new rates would increase the company's total revenues by 11.9 million dollars, or less than 8 per cent, according to Roger W. Hartt, revenues vice president.

The specific amounts of increase will depend on the number of telephones in the local calling area and the type of service the subscriber has. The company said increases would be slightly higher in three exchanges—Bridgeport, Thompsonville and Windsor Locks—because of unusually rapid growth of the number of telephones in these local-calling areas.

Proposed increases will be offset completely, or in part, by reductions in zone charges for 43,000 subscribers living in outlying areas which in recent years have become more heavily settled.

Increases are needed to help offset continuing inflation and pay a large increase in state taxes that will amount to almost 5 million dollars next year alone, Mr. Hartt stated.

"Meeting these needs," Hartt said, "will give us the financial resources we need to keep pace with the growing demands of Connecticut people for more and better telephone service."

He pointed out that rising living costs have far outdistanced telephone rates. "Even with the proposed revisions," he said, "Connecticut telephone rates will have gone up only one-third as much as the cost of living since the current cycle of inflation began in 1940."

Mr. Hartt said that costs of operating the business have been increasing steadily since the company's last rate increase in 1957.

"Our annual payroll, for example, has gone up 8 million dollars over this period," the Bell spokesman said, "although we have not increased the number of our employes."

"We have worked hard to hold the line against inflation. We have kept strict control of expenses, used increasingly more efficient methods and stepped up our sales activity. These measures have helped, but inflation is moving too fast for us to keep up without rate relief."

Approve Raise, EAS; Seek Increase, Sale OK's in Wis.

Arnold Telephone Co., Sheldon, on Sept. 22 was granted a $2,356 rate increase by the Wisconsin Public Service Commission. The company serves 310 subscribers.

•

The commission on Sept. 21 authorized the Fairwater-Brandon-Alto Telephone Co., Brandon, to provide extended area service between its Brandon exchange and the Waupun exchange of Wisconsin (Bell) Telephone Co. (TELEPHONY, June 24). This EAS will be provided in connection with the company's dial conversion project.

•

Also in Wisconsin, the commission on Oct. 11 was to hear the application of the Scandinavia Telephone Co. for authority to increase rates at its Scandinavia and Iola exchanges.

•

On Oct. 12 the commission has scheduled a hearing on the application of the Pacific & Wyocena Cooperative Telephone Co., Wyocena, for authority to sell its Wyocena exchange to General Telephone Co. of Wisconsin.

Ind. PSC Reverses Order; OK's Pleas, Receives Petitions

The Indiana Public Service Commission on Sept. 22 reversed its order permitting telephone service to be provided by two companies in the same area in Owen County.

The commission, on Jan. 13, 1961, had authorized the Smithville Telephone Co., Ellettsville, to provide service as a second telephone company in certain areas of Taylor and Jennings Townships in Owen County. Service was also being provided by the Clay County Rural Telephone Cooperative Inc., Poland.

In its Jan. 13 order the commission had stated: "While the commis-

(Continued on page 40)

It's easy to see—with U. S. Instrument's all-new Type 30 PABX! Panel lights show which extension is in use...when it's hung up. What's more, a special pushbutton lets extensions hold or transfer calls without flashing operator. ■ New Type 30 PABX is available for up to 100 lines, 10 trunks, 12 connecting links. In coming or outgoing calls do not interfere with these links. And you're sure of service continuity, since emergency circuits automatically cut in, in case of power shortage. Other features: direct dialing . . . restricted service . . . automatic release . . . privileged stations . . . night connections . . . call storage. For details, ask Graybar for Catalog 730A and Catalog P60F5. It's another reason to call Graybar—for everything. Graybar Electric Co., Inc., 420 Lexington Avenue, New York 17, N. Y.

627 GraybaR

WESTERN ELECTRIC AND

"SNOW WHITES" are girls at Western Electric's new Kansas City Works who work in super-clean conditions to produce miniature electronic products for the Bell Telephone System to the most exacting specifications. The girls you see are assembling mounts for electron tubes which will be used in Bell System telephone amplifiers.

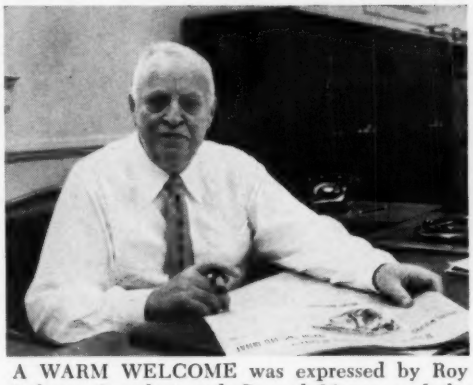
KANSAS CITY

Known as the "Gateway to the Southwest" — fast-growing Kansas City offered an ideal location for Western Electric's new manufacturing plant, where electronic parts and equipment are now being manufactured for the Bell Telephone System.

An electronically-triggered dynamite explosion signalled the start of construction on April 28th, 1960, at the 340-acre site in Lee's Summit, just outside Kansas City, Missouri.

Eventually, there will be some 5000 employees at the new plant, receiving an estimated payroll of $25 million annually — all playing important roles in the production of a wide variety of communications products for the Bell Telephone System. These include transistors, electronic tubes, switchboard lamps, and complex carrier equipment capable of transmitting a TV program and hundreds of telephone calls over a single channel.

Western Electric has been warmly welcomed by our neighbors in the Kansas City area. In return, it's our hope that the new jobs we are creating here, the resulting new business for local merchants and suppliers, and the taxes we pay will contribute to the future progress of this vital area.

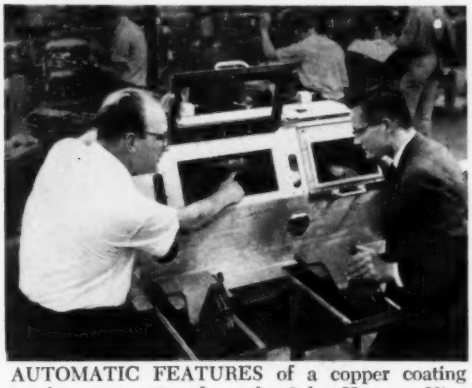


A WARM WELCOME was expressed by Roy Roberts, President and General Manager of the Kansas City Star, when he said, "Kansas Citians are delighted to have W.E. expand their operations here. Western's employees are already proving that they're good citizens as well as good workers."

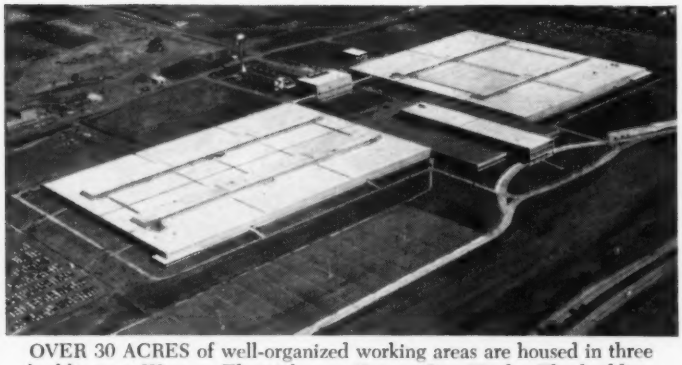
Besides Kansas City, Western Electric has 12 other principal manufacturing locations, where we make hundreds of different products for the Bell System and for the Government, mainly for defense. Last year we purchased over a billion dollars' worth of raw materials, products and services from our nearly 40,000 suppliers located in every State of the Union. Of these, 90% are "small businesses." The things we make and buy are distributed to the Bell Telephone companies through Western Electric distribution centers in 33 cities.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM



AUTOMATIC FEATURES of a copper coating machine are pointed out by John Hoover, Vice President of the Summit Engineering Co., to L. G. Swenson, a visiting W.E. buyer. Summit is one of many local businesses that supply parts, tools, and machinery to the Kansas City manufacturing plant.



OVER 30 ACRES of well-organized working areas are housed in three buildings at Western Electric's new Kansas City Works. The building in the center is for administration and service — the other two for manufacturing electronic communications equipment for the Bell System.

ON STAGE at Kansas City's Starlight Theatre are Western Electric training leader Lou Wells and his family. Lou, like many other employees at W.E., is active in community life. Above, set and lighting designer Phillipe de Rosier explains his work to the Wellses—Lou, wife Flo, Susan, Randy, and Debbie.

sion realizes that such practice should not be common and widespread, there are exceptional circumstances in which it appears to be the only feasible solution."

In its current action, the commission set aside the Jan. 13 order and said that further hearings on the case would be held.

The commission has issued the following purchase approvals:

Whitestown Citizens Telephone Co., Thomas Telephone Exchange, Inc., Roachdale, and the Amo exchange were given permission to sell to the Hendricks Telephone Corp., Clayton (TELEPHONY, Nov. 12, 1960).

Patricksburg Telephone Exchange and the Coal City Telephone Co. were authorized to sell to the Clay County Rural Telephone Cooperative, Inc., Poland (TELEPHONY, Feb. 4, 1961).

Cincinnati Farmers Cooperative Switchboard Co. Inc.; Owensburg Cooperative Telephone Co., Inc., and Scotland Cooperative Telephone Co. were given okays to sell to the Smithville Telephone Co. Inc., Ellettsville (TELEPHONY, Feb. 4, 1961). Smithville plans to consolidate the service areas of the three exchanges—Cincinnati, Owensburg and Scotland—into one unattended dial central office to be known as the Owensburg exchange.

New Dillsboro Telephone Co., Dillsboro, was given permission to sell to the Dillsboro Telephone Co. Inc. (TELEPHONY, June 17). The purchaser was also authorized to sell 3,300 shares of common capital stock, and to borrow $75,000 from Stromberg-Carlson Credit Corp. to convert the Dillsboro exchange to dial.

The Dillsboro Company was also allowed an increase, effective on conversion, which will provide net operating revenue of $6,145.74.

Southeastern Indiana Rural Telephone Cooperative Inc., Dillsboro, was given permission to purchase the Moores Hill Telephone Co. by accepting the Batesville Telephone Corp's contract to purchase Moores Hill. The Southeastern Indiana company was also authorized to borrow $45,000 which will cover, among other projects, the conversion of Moores Hill to dial.

•

In other financing approvals, the commission authorized the United Telephone Co. of Indiana, Inc. to issue and sell 16,000 shares of $50 par value common stock and $1,750,000 in first mortgage 5⅛ per cent 30-year bonds.

Indiana Telephone Corp., Seymour, was given approval to issue and sell 2 million dollars worth of first mortgage sinking fund 5⅜ per cent bonds (TELEPHONY, Aug. 12).

Mulberry Cooperative Telephone Co., Inc. was allowed to borrow $40,000 from the American United Life Insurance Co. (TELEPHONY, Aug. 12).

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The commission has before it the following petitions:

The Missouri Telephone Association recently held two fall district meetings. In the top photo, participants at the Sept. 6 meeting in Columbia are shown at lunch in the Tiger Hotel. Approximately 75 persons attended this session. In the bottom photo, those attending the Springfield meeting on Sept. 8 are gathered for a group photograph. This gathering had approximately 118 registrants. Both groups heard speakers including Lawrence J. Hogan, TELEPHONY'S Washington editor and president of Larry Hogan Associates; Warren D. Welliver, politically active Columbia attorney; Judge William Barton, former Missouri Public Service commissioner; and former Missouri governor, James T. Blair Jr.

Washington County Rural Telephone Cooperative, Inc., Pekin, has asked for a rate increase.

Carroll Telephone Co. Inc., Delphi, proposes extended area service between its Delphi exchange and the Camden exchange of the Camden Telephone Co. Inc. It also asks approval of toll free service between Delphi and the Cutler exchange of Cutler Cooperative Telephone Co.

Coatesville Telephone Co. asks approval to issue and sell 300 shares of common capital stock.

Elwyn P. Hankins, doing business as the Reynolds Telephone Co., seeks to sell to the Reynolds Telephone Co., Inc. The purchaser asks approval to borrow funds for dial conversion and to increase rates on completion of the conversion.

The Uniondale Telephone Co. Inc. has asked for approval of a rate increase.

Set Financing Hearing in Ark.

The Arkansas Public Service Commission on Oct. 3 was to hear the request of the Interstate Telephone Co., Waldron, to borrow $24,750.

Tenn. Company Asks Raise to Offset Toll-free Service

A rate increase to cover toll-free service has been asked by the Millington Telephone Co. and will be the subject of a Tennessee Public Service Commission hearing on Oct. 19.

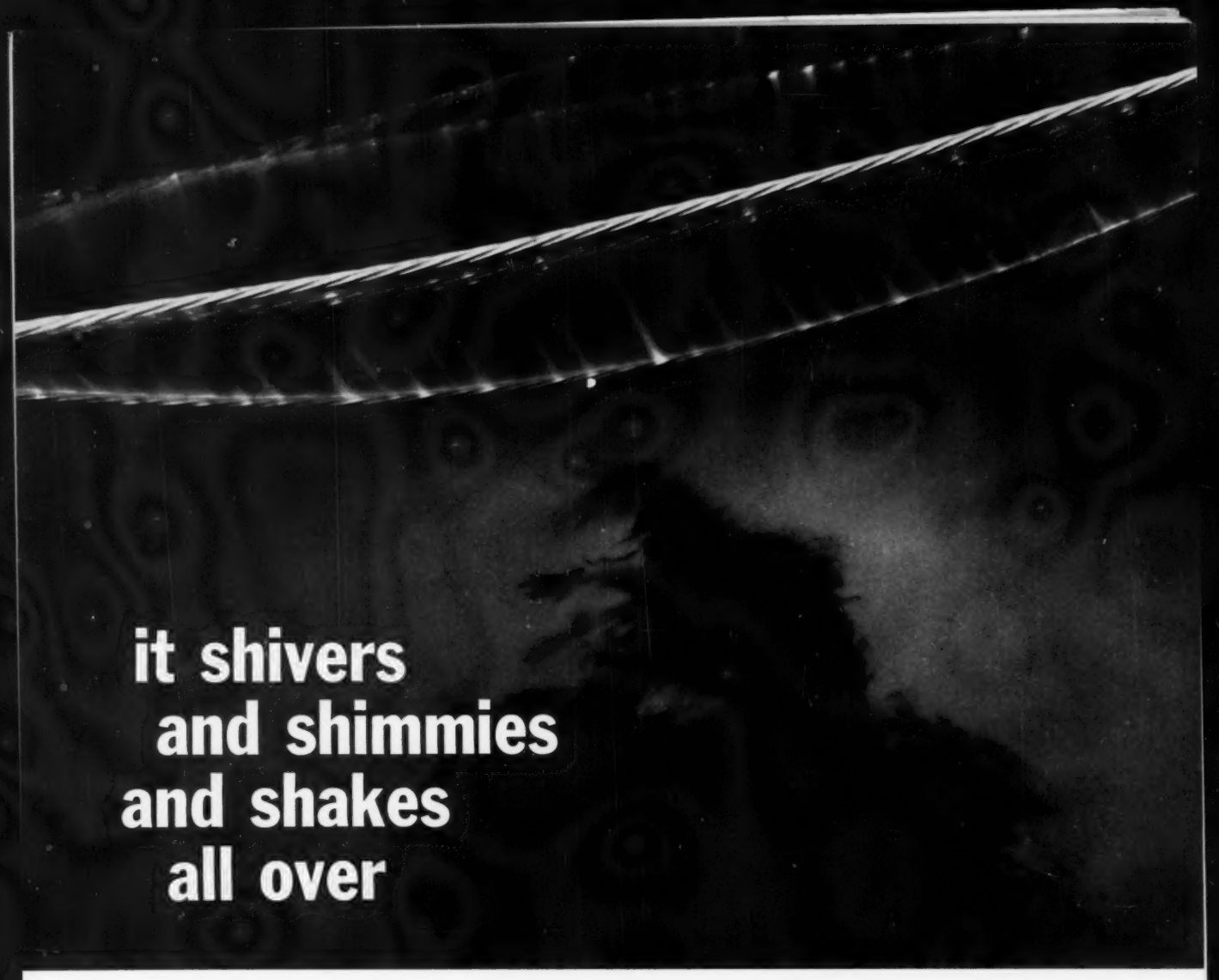
The Millington company plans to initiate this service in January between its Millington exchange and the Memphis exchange of Southern Bell Telephone & Telegraph Co.

Millington company spokesmen said that in a recent survey of subscribers, it was found that the increased rates and toll-free service were favored more than two-to-one.

Sample increases sought are: One-party business from $7.50 to $18; one-party residence, $5.25 to $7.70.

Approve Ga. Bond Issue

The Georgia Public Service Commission on Sept. 22 authorized the Statesboro Telephone Co. to issue and sell $250,000 20-year first mortgage bonds at 5¼ per cent to finance central office and outside plant additions, establish extended area service between



But your vibration problems are minimized if it's bethanized strand

Steel

for Strength
. . . Economy
. . . Versatility

Overhead ground wires vibrate every time the wind blows. And that vibration is destructive, because it sets up fatigue stresses which can ultimately cause weakening and failure. But Bethlehem bethanized strand has superior resistance to fatigue. Here's why.

BETHANIZING FOILS VIBRATION

Fatigue tests show the superiority of bethanized wire over other types of coated wire, including conventional galvanized wire. First, because steel wire, with its high endurance limit, is best able to withstand fatigue stresses. Secondly, the smooth uniform coating of pure zinc, electrolytically applied in the bethanizing process, in most cases actually enhances this endurance limit.

BETHANIZING FOILS CORROSION, TOO

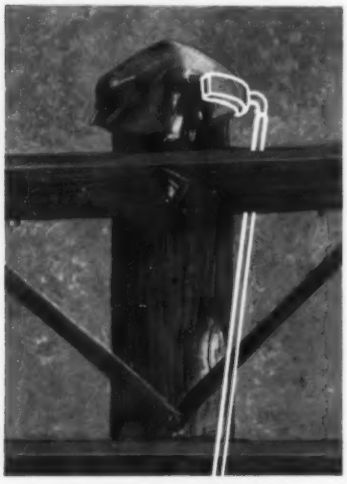
The bethanized coating is exceptionally ductile because the zinc is so pure. It does not peel or crack, provides excellent corrosion-resistance. Available in four different coating weights, it gives you the right corrosion protection for each installation. For full information, get in touch with the nearest Bethlehem sales office.

Bethlehem Steel Company, Bethlehem, Pa. *Export Sales:* Bethlehem Steel Export Corporation
Distributor: Joslyn Mfg. & Supply Co.

BETHLEHEM STEEL

BETHLEHEM STEEL

EASY TO INSTALL FROM BELOW THE CROSSARMS



Long-Lasting
OSMOSE POLE TOPPERS

Use the easiest, most economical way to keep your poles in "tip-top" shape. OSMOSE POLE TOPPERS can be installed easily in a matter of minutes, even from below the crossarms with the aid of a hot-stick applicator.

Their unique woven construction allows them to fit tightly, snugly... conforming exactly to the contours of the pole roof area. Moisture is sealed out eliminating fungus decay and weathering action, such as shrinking, swelling, freezing, thawing which may cause checks right down to the crossarm bolt holes.

For lasting results, POLE TOPPERS should be installed over POLE TOPPER FLUID... a special, liquid 10% penta solution that penetrates deep into the wood to stop fungus growth which may be hidden below the roof area.

POLE TOPPER application can be performed either by our contract service using experienced field crews, or with your own crews when climbing poles for other maintenance purposes. For further information and prices, write Osmose Wood Preserving Co. of America, Inc., 976 Ellicott St., Buffalo 9, N. Y.

OSMOSE

SERVING UTILITIES SINCE 1935

its facilities and those of Bulloch County Rural Telephone Cooperative, Inc., also at Statesboro, and to repay its current indebtedness.

Authorize Three Sales; OK Connection Charges in Neb.

Three property transfers were approved by the Nebraska Railway Commission on Oct. 4 as follows:

Two sole proprietorships owned by Leo G. Hartman of Danbury, the Danbury-Lebanon Telephone Co. and the Haigler Telephone Exchange are to be sold and transferred Nov. 1 to the Hartman Telephone Exchanges, Inc., Danbury (TELEPHONY, Oct. 7). The company proposes to modernize the properties which serve 385 company-owned and 80 switching subscribers.

The Keystone-Arthur Telephone Co. a sole proprietorship, owned by William B. S. Hill, Keystone, will be sold and transferred on Nov. 1 to the Keystone-Arthur Telephone Co., a corporation (TELEPHONY, Oct. 7). The company serves 89 subscribers at Keystone and operates a toll line between Keystone and Arthur. It proposes to convert the service to dial operation.

Also on Oct. 4 the commission approved revisions in service connection charges for the General Telephone Co. of Nebraska, Columbus, as follows:

Where instruments are in place and taken over by a new applicant, the charge is increased from $1.50 for business and $1.00 for residence to $3.50 for business, semi-public and residence telephones.

For restoral of service the charge is increased from $1.50 for business and $1.00 for residence to $2.50 for both business and residence.

Inside move charges and changes in type and style of instruments are increased from $1.50 to $3.50 for main stations, PBX stations, extensions, bells, gongs, horns, chimes and lamps (including PBX operators' sets).

Kansas Independent's Sale Authorized

The Kansas Corporation Commission has approved sale of the Collyer Telephone Co. to the Sunflower Telephone Co., Inc., Dodge City, it was reported on Sept. 18. The transfer will be completed by Apr. 1, 1962.

The Sunflower company plans to install a dial systen in Collyer.

Purchase Request in Indiana

The General Telephone Co. of Indiana, Ft. Wayne, on Sept. 25 asked the Indiana Public Service Commission for permission to purchase the Boone Grove Independent Telephone Co.

Incorporate in Colorado

The Simla (Colo.) Telephone Exchange, has filed articles of incorporation. Incorporators are listed as H. Raymond Hope; Ruth W., and Esther Hope.

Alaska Telephone Corp. Requests Rate Raise

Alaska Telephone Corp. recently asked the Seward City Council for rate increases ranging from 24.4 to 38.8 per cent over existing rates.

Following are the rates set in 1956 and those proposed:

One-party business	$12.75	$16.50
Two-party business	10.25	14.00
Multi-party business	9.30	12.50
One-party residence	8.25	11.00
Two-party residence	6.75	9.00
Multi-party residence ...	5.75	7.75

File Rate Raise Petition, Approve Sale in Illinois

The Illinois Commerce Commission on Oct. 4 suspended and will set for hearing the application of the Tonica Telephone Co. Inc. for increased rates.

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Also on Oct. 4 the commission approved the sale of the Shumway Mutual Telephone Co. to the National Trail Telephone Corp., Altamont (TELEPHONY, July 22).

NARUC Adopts Resolution on Private Satellite System

The recent convention of the National Association of Railroad & Utilities Commissioners (NARUC), held in Atlantic City, N. J., adopted a resolution that the common carrier industry should be encouraged to provide satellite communications "in the traditional American way, under regulation, without government subsidy."

The resolution pointed out that private responsibility for space communications would be consistent with past national communications policy, which "has resulted in the most extensive and efficient communications system in the world."

Obituary

PAUL C. BRANSBY, 57, general superintendent of Columbia (Pa.) Telephone Co., died on Sept. 24. Death was attributed to a coronary occlusion.

Mr. Bransby had been employed by the company for 34 years, and became general superintendent about six years ago.

Prior to joining Columbia, he had worked for the Bell Telephone Co. of Pennsylvania. His first job with Columbia was as a cable splicer. He later was wire chief, and also served as plant manager before being named superintendent.

Mr. Bransby was a member of the Plant Committee's Sub-committee on Outside Plant of the United States Independent Telephone Association, and had served on the board of directors of the Independent Telephone Pioneer Association.

Besides his mother, Mrs. Mary Kreig Bransby, he is survived by his widow, Cathleen Clouser Bransby; and by two sons, Paul C. Jr. and Richard G., and a daughter, Mrs. James O'Reilly, all

of Columbia. Four grandchildren also survive; three brothers—William A. and Henry J., both of Lancaster; and Brother Elmo Bransby, C.S.C., of New Haven, Conn.; and a sister, Mrs. Edward Hallman of Trenton, N.J.

R. D. Bonnar Named President Geneva (O.) Company

Robert D. Bonnar has been named president and general manager of the Geneva (O.) Telephone Co. He was formerly general manager and assistant secretary of the Astabula (O.) Telephone Co.

R. D. BONNAR

Mr. Bonnar was also elected a director of the Geneva company. In other Geneva company changes, J. T. Jones, president and treasurer, was made chairman of the board. C. O. Peterson was elected treasurer.

A native of Ashtabula, Mr. Bonnar had been connected with the Astabula company since his graduation from Oberlin College in 1942. His duties as general manager will be assumed by Howard M. Wright, company president.

Mr. Bonnar's father, J. D. Bonnar, the company's board chairman, has been in the telephone industry for 60 years.

The Geneva company became an affiliate of the Mid-Continent Telephone Corp. in June 1961. The Ashtabula board of directors recently voted to accept mid-Continent's offer for an exchange of stock.

CEPTA Sets Up Group To Study Space Communications

The Conference of European Postal & Telecommunications Administrations has set up a study group on member countries' problems in connection with developments in the field of radio communication via artificial earth satellites.

The group, which recently held its annual meeting in Torquay, England, represents 19 countries.

Next year's meeting will be held in the Federal Republic of Germany.

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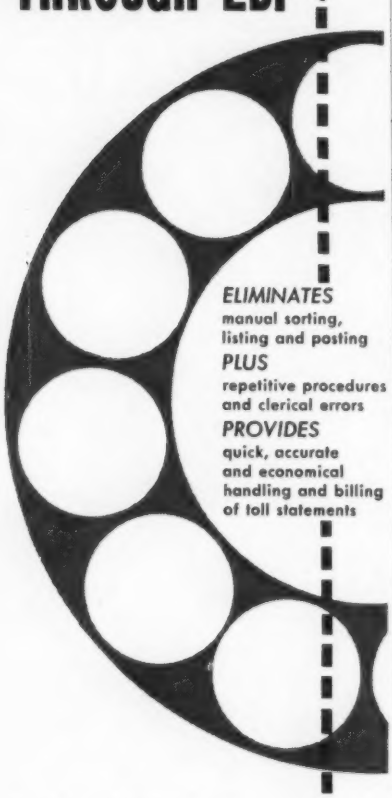

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REA Authorizes Six Loans Totaling $2,751,000

THE RURAL Electrification Administration authorized six telephone loans during the last week of September, benefitting 4,213 subscribers, in the amount of $2,751,000, as follows:

Leeds (Ala.) Telephone Co.; $186,000; Sept. 25.

The company plans to use this loan to furnish initial service for 641 subscribers in its Ashville and Springville exchange areas. Facilities required will include expanded dial office equipment.

REA loans to the borrower will help make possible new and improved service to 4,014 subscribers. The four exchanges of the system now furnish dial service to approximately 3,300 subscribers.

•

The Moundridge (Kan.) Telephone Company; $1,011,000; Sept. 25.

These funds will help enable the Moundridge Company to improve service for 1,308 subscribers and furnish initial service to 358 families.

The new borrower of REA loan funds is a commercial corporation. It now provides common battery and magneto service to 858 of the existing subscribers. The remaining 450 are served through the magneto facilities of the Goessell Telephone Co. which the borrower plans to acquire.

A new dial office-headquarters building is planned for construction in Moundridge, and a new dial office will replace the Goessel facilities.

F. E. Dyck is president of the Moundridge Telephone Co.

•

Hill Country Telephone Cooperative, Ingram, Tex.; $200,000; Sept. 25.

With the help of this loan, the company will be enabled to furnish initial service to 215 subscribers in the service area, and build a new commercial office building in Ingram. Facilities required to serve the new subscribers will include expanded central office equipment.

REA loans to Hill Country will help make possible new and improved service to 2,248 subscribers. The ten exchanges of the system are now furnishing dial service to approximately 1,960 subscribers.

•

Northeast Texas Telephone Co., Bogata; $334,000; Sept. 25. The company intends to use this loan to provide initial service for 285 subscribers in the service area. Facilities required will include an additional exchange and new dial central office at Sulphur Bluff, and expanded dial facilities in the five existing central offices.

Northeast Texas has received REA loans totaling $1,047,000. These funds will assist it to furnish new and improved service to 2,077 subscribers. Five exchanges are now furnishing dial service to approximately 1,615 subscribers.

•

Texas-Midland Telephone Co., Grandview; $530,000; Sept. 25.

With the help of this loan, the company will be enabled to improve service for 419 subscribers, and to furnish initial service to 210 subscribers. The borrower proposes to acquire the Iredell common battery and the Tolar and the Paluxy magneto exchanges from the Brazos Telephone Co., and integrate them with its own system.

New dial central offices will replace the three acquired exchange facilities.

REA loans to Texas-Midland will aid it to bring new and improved service to 4,052 subscribers. Six of the proposed 17 exchanges of the system now furnish dial service to approximately 850 subscribers.

•

Atlantic Telephone Membership Corp., Shallotte, N. C.; $490,000; Sept. 26.

This loan will help the company to provide facilities to serve 777 new subscribers, make improvements which will result in a higher grade of service for existing subscribers, and install special trunk lines for direct distance dialing.

A new dial office is to be constructed at Longwood to serve the additional subscribers. The new Longwood exchange is now a part of the Shallotte exchange area. A small portion of this loan will be used to install two-way radiotelephone equipment for system maintenance.

REA loans to Atlantic Telephone will help enable it to furnish new and improved service for 1,904 subscribers. The system will consist of three exchanges of which two now furnish dial service to approximately 1,275 subscribers.

Elected PR Group Head

R. L. Post, public relations director for the Southwestern States Telephone Co., Brownwood, Tex., has been elected president of the Texas Public Relations Association, an organization composed of men and women in public relations work at the executive level, statewide. His election came at the association's recent annual convention in Fort Worth.

TELEPHONE BUILDINGS

(Continued from page 24)

vary depending upon the use classification of the building.

Telephone companies should always make an effort to acquaint local zoning officials with their problem so that when either a new zoning ordinance is passed or an amendment is made to an existing ordinance, reasonable provisions may be included to govern the requirements for telephone buildings. The majority of telephone buildings have large equipment areas where few workers are required, thus, there is very little need for large parking areas at the majority of locations.

The Automatic Electric Co. recommends a 10-foot 6-inch ceiling clearance below the lowest obstruction for all rooms in which their equipment is to be installed. When 11-foot 8-inch frames are used, the ceiling height should be at least 13-feet 6-inches minimum. The load bearing capacity of the floors should be 125 pounds per square foot if 9-foot frames are used, and 150 pounds with 11-foot 8-inch frames.

It will be noted that the difference in ceiling heights is less than 30 per cent, but the high frames have 33 to 40 per cent more capacity. This is a partial measure of the advantage of high frames. The saving in floor space is even more important when the size of a building lot is limited.

The aisle widths in equipment rooms should, in all cases, receive careful consideration. When equipment must be installed in an existing building, it is possible to reduce the aisle widths. This practice may, however, seriously interfere with maintenance operations throughout the life of the equipment. When it is possible to provide wider aisles, in planning a new building, it is always good engineering to do so.

Whatever building requirements have been considered standard for a given number of lines with electromechanical types of switching, the advent of electronic switching has made previous ideas of compactness obsolete, according to General Dynamics/Telecommunication, in connection with its Stromberg-Carlson Dynalogic electronic switching.

The switching equipment for an electronic private branch exchange (PEBX) in service offers 500 lines, 100 links, and 40 trunks in only 8 square feet of floor space as mounted on 6-foot frames. An electronic community dial office (CEDO), soon to be installed, will have 120 lines, 27 trunks, and complete new toll ticketing facilities in just a portion of the space now occupied by a 90-line electromechanical system.

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tronic switching to meet expansion demands can be illustrated by a typical case: An existing electro-mechanical MDO has only 20 square feet of space left in the equipment room. There is an immediate requirement for 500 additional lines.

Instead of extending the building outward or upward to provide the necessary 40 square feet for 500 electro-mechanical lines, a 1000-line Dynalogic addition is placed in the 20 square feet already available. The required 500 new lines are activated.

At any time which meets the growth pattern of the company, the unused 500 Dynalogic lines can be made operative, and an equivalent number of electro-mechanical lines retired or re-located in another office. This provides another 40 square feet of additional space within the original building.

This process can continue, as necessary, using the better than 5 to 1 favorable space ratio; a 10,000-line Dynalogic Medo, for instance, can be placed in a building originally built to accommodate 2,000 lines of electro-mechanical equipment. Costs which would have been incurred for new construction thus represent a direct net savings.

Dynalogic offers the additional advantage of free-form modular design so that low ceilings and other spacial or weight distribution requirements are simply met through a rearrangement of modules. Because no heat is generated, cooling equipment can be minimized or eliminated, according to General Dynamics/Telecommunication.

XY dial equipment (electro-mechanical) is a most compact step-by-step system partly because its design utilizes both sides of the bay frame, and also because the switching mechanism itself requires only 1½ inches of vertical shelf space.

A typical Stromberg-Carlson 200-line XY dial office, meeting REA specifications can be placed in a building with inside dimensions of 12 feet x 20 feet with provision for 50 per cent expansion. Equipment is mounted on 9-foot racks, requiring a 10-foot 6-inch ceiling. The load bearing capacity of the floor should be 125 pounds per square foot.

An office for 800 lines, 1,600 terminals, again meeting REA specifications, has been placed in a 20-foot x 27-foot building, with appropriate allowance for growth. Full width of a double-sided equipment bay is 1 foot 4 inches; aisle space recommendation is 2 feet 6 inches minimum.

Where floor area must be conserved, 11-foot 6-inch frames may be used.

The North Electric Co. was somewhat surprised at the attitudes on ceiling heights encountered in connection with the use of its NX-2 crossbar switching equipment. This equipment is built up in modules 2 feet high and it is practicable to stack them in approximately 2-foot increments of height to any point desired by the operating company.

One of the obvious requirements for the crossbar equipment is for the replacement of outgrown all-relay systems. The original considerations were in terms of what could be installed in a building designed originally for all-relay equipment. The plan first considered was four modules high in 8½ foot frames. When operating companies were made aware of the fact that the modules could be stacked higher, many of them requested that five modules high be mounted in approximately 11-foot frames. One company now has several buildings under construction in which six modules high will be mounted in 13-foot bays. It is considered entirely possible to mount seven modules high in 15-foot bays.

North Electric recommends the following nominal ceiling height, and floor loading for its crossbar, toll ticketing and restrictor equipment:

Type Equipment	*Recommended Min. Ceiling Height*	**Floor Loading by Unit Area*
NX-1 Crossbar		
8′ High Units	10′ 6″	450 #Sq. Ft.
10′ 6″ High Units	12′ 6″	575 #Sq. Ft.
NX-2 Crossbar		
3 Module High	8′ 6″	230 #Sq. Ft.
4 Module High	10′ 6″	300 #Sq. Ft.
5 Module High	12′ 6″	375 #Sq. Ft.
6 Module High	15′ 6″	450 #Sq. Ft.
Toll Ticketing—Restrictors		
6′ 9″ Frames	9′ 6″	200 #Sq. Ft.
9′ 0″ Frames	10′ 6″	250 #Sq. Ft.
10′ 2″ Frames	12′ 6″	300 #Sq. Ft.
11′ 8″ Frames	13′ 6″	350 #Sq. Ft.

*Based on the nominal weight per unit divided by the floor area.

In the past, the open cell type storage batteries were generally installed in a separate room with an outside vent. An exhaust fan was often used to insure adequate ventilation. With the modern system of maintaining batteries in a full charge condition, gassing and excessive fumes are eliminated. Storage batteries are installed in the same room with the equipment, with no special provision made for extra ventilation in most present-day small exchanges.

Manufacturers generally recommend that their batteries be installed in a

well-ventilated room out of direct sunlight and away from steam pipes or any direct source of heat. We have not, however, ever received any complaints of damage due to fumes escaping from a modern sealed type storage battery and this type of battery is not considered to be a safety hazard.

Central Office Lighting

The proper lighting of equipment rooms is considered most important. The light source should be of enough intensity and properly diffused so that troublemen can make routine repairs without the use of an extension light. Frequently, lights are mounted on the ceiling and later equipment frames and cable runs are installed beneath them so that the greater part of the light is obstructed. Aisle type lighting fixtures designed for mounting on the underside of cable racks are now available. This arrangement provides light in the working area and the use of extension cord lights is reduced to a minimum.

Air-Conditioning

The advantages of air conditioning are so numerous that it is considered a must in the modern, present-day, telephone exchange. The fresh air intake can be regulated so that a continuous overpressure is maintained in equipment rooms. The air passage through all small openings is then always directed outward and the fresh air supply will all come through filters. This arrangement provides adequate dust control.

It is generally agreed that it is desirable to maintain a constant relative humidity of approximately 60, plus or minus 10 per cent in equipment rooms. This air moisture content can usually be maintained when adequate air conditioning is provided. In some cases, however, under special climatic conditions, it may be necessary to provide special dehumidification equipment.

We do not intend to infer that the ideas offered in this article will provide all of the information required to plan and design a satisfactory telephone building. However, it is hoped that we have been successful in specifying certain guide lines which may serve as a starting point for planning by telephone company officials and architects. If this practice is observed, we believe that satisfactory telephone buildings will result.

F. X. Welch Joins Faculty of USITA Management Program

Francis X. Welch, noted authority on public utility law and rate regulation, and former Washington editor of TELEPHONY, has been appointed to the faculty of the United States Independent Telephone Association's Management Development Program, at the University of Kansas.

The announcement of his appoint-

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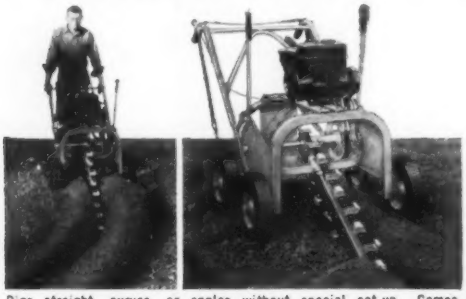

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F. X. WELCH

ment was made by Dr. James R. Surface, director of the four-week summer program, and dean of the University of Kansas' School of Business.

Mr. Welch succeeds A.J.G. Priest of the University of Virginia Law School, who for the past four years, has planned and taught the rate regulation portion of the program.

The rate regulation portion of the program covers such topics as regulation, current trends in regulation, management's responsibility as to rate regulation and the preparation and presentation of rate cases. A mock rate case, in which each participant takes a part, has been a regular part of this course.

Professor Welch, a graduate of Georgetown University Law School, Washington, D.C.; with BL, LLB, and LLM degrees, is editor of Public Utilities Fortnightly, and professor of public utility law, Georgetown University. He is also the elected secretary of the Section of Public Utility Law of the American Bar Association and has been since 1957.

In addition, Professor Welch is author of "Preparing for The Public Utility Rate Case" (1954) and the companion volume "Conduct of the Utility Rate Case" (1955), and Welch's "Cases on Public Utility Regulation" (three editions)—most widely used authority on this subject for instruction of students in public utility law throughout the United States. His most recent volume is "Cases and Text on Public Utility Regulation" (1961).

Atlas Communications System At Warren A.F.B. Links Sites

The General Telephone & Electronics Corp. announced on Oct. 2 that installation of the Atlas intercontinental ballistic missile inter-site communication system at Francis E. Warren Air Force Base near Cheyenne, Wyo. was completed on schedule and was undergoing acceptance testing.

The systems engineering and management operation (SEMO) of Syl-

vania Electric Products Inc., a subsidiary of GT&E, heads an industry team working under a 6-million-dollar Air Force contract for the Atlas communications systems at Warren and at Schilling Air Force Base, Kan. The team includes Lenkurt Electric Co., General Cable Corp., and Ets-Hokin & Galvan, Inc.

SEMO is a part of Sylvania Electronic Systems, a major division of the company with over-all responsibility for systems management of GT&E's major government projects.

Richard W. Couch, manager of SEMO, announced that under terms of a recent addition to the contract, Sylvania also is installing a tie cable linking the three Atlas missile squadrons at Warren.

The Atlas, a 90-foot liquid-fuel missile with a range of over 5,500 nautical miles, is an operational strategic weapon.

Completely underground, the entire missile site is built to withstand nuclear attack. At Warren, the missiles are stored horizontally and elevated to a perpendicular position for firing. At Schilling, the missiles are stored in silo-like structures more than 100 feet deep.

The inter-site systems provide communications between the individual launch complexes and the command post. Central command posts at Warren and Schilling are linked to the Strategic Air Command's alert system.

The fully integrated inter-site systems employ Lenkurt 45BN carrier communications equipment at command posts and terminal locations. Lenkurt is responsible for engineering the comunications system and supplying power and multiplexing equipment. Transistorized repeater equipment located along cable routes amplifies transmission of voice or data signals between terminals.

Telephone cable utilized within the system was supplied by General Cable, while Ets-Hokin & Galvan was responsible for installation. Maintenance and operation of the systems are the responsibility of Sylvania and its maintenance subcontractor, Ets-Hokin & Galvan, for a period of one year. Sylvania is also handling field engineering direction at the sites.

Tennesseeans Review Their Technical Problems, PR

The 1961 convention of the Tennessee Telephone Association was held at the Hotel Hermitage in Nashville on Sept. 6-7, with N. V. Ferguson of Bradford, president, extending greetings to industry representatives and associate members.

First address of the convention was delivered by Assistant REA Administrator E. F. Renshaw, who expressed his agency's point of view on matters relating to loans and the telephone industry.

Featured on the first day's program were a lecture demonstration on DDD,

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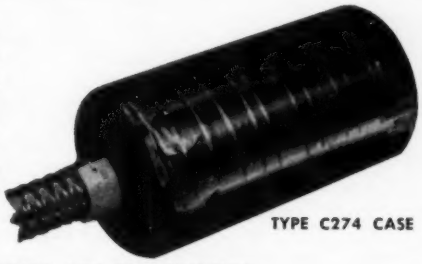

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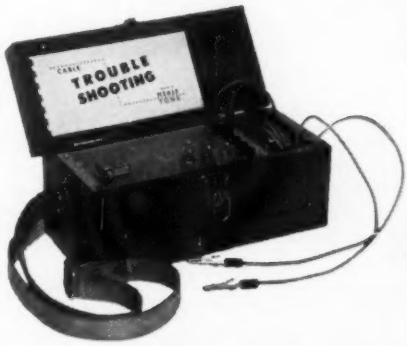

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entitled "Objectives of Tennessee Technical Problems Committee," presented by W. S. Slusher, manager of the Ben Lomand Telephone Cooperative, McMinnville; and a film of the 1960 convention.

An out-of-industry talk was delivered by Gale Gupton, vice president of the Third National Bank of Nashville, and pointed up the businessman's outlook with the reminder, "Attitude Changes Altitude."

The timely subject of "Practical Public Relations" was explored for Tennessee telephone men and women by a public relations counselor James S. Metcalfe.

In behalf of the conventionites, president Ferguson gave a special welcome to Tennessee to the ITT-Kellogg plant. Various suppliers hosted hospitality rooms before the annual banquet and at the midnight supper.

Kelley McNish, president of Inter-Mountain Telephone Co. of Bristol, served as toastmaster at the banquet and for the evening's entertainment. Ladies in attendance enjoyed a breakfast and fashion show.

Voicing the concern of many Americans for the future of democracy in the world, Father Hugh Halton, O.P., in the final address before the convention, warned of the "Dangers of Communism."

Reports of the business meeting revealed that Horace Vaughn of Fayette, Ala. was elected to the board of directors.

The following were re-elected: S. O. Anderson of Gainsboro; Mr. Ferguson, the retiring president, of Bradford; L. T. Odle of Parsons; John E. Sexton of Bristol; Jesse Tuggle of Nashville; M. V. Williams of Friendship; Randel S. Burns of Pikeville; Herman R. McDonald of Knoxville; C. H. Scott of Cookeville; William S. Slusher of McMinnville; and W. S. Howard of Millington.

The directors elected these officers: President, Mr. Sexton; first vice president, Mr. Williams; second vice president, Mr. Burns; third vice president, Mr. Scott; and secretary-treasurer, Mr. Howard.

GT&E Elaborates on Proposed Space Communication System

General Telephone & Electronics Corp.'s proposed world-wide communications system, using satellites 22,300 miles in outer space above the equator as relay stations for global telephone, television, and data communications, was further described in New York on Oct. 9 by the company (TELEPHONY, July 1).

Pointing out that international communications is growing so rapidly that existing and presently planned transoceanic cable and radio facilities will be inadequate within a very few years, GT&E scientists said that "the only way the communications industry will be able to carry the greatly increased traffic of the future will be to go to outer space."

Urging that a global communications system be authorized by the government without delay, they warned that "Russian scientists are known to be working on space communications, and the United States must assure that it does not lose the opportunity to be the first to provide an operational world-wide system."

In a demonstration at the annual meeting and exposition of the American Rocket Society, which opened on Oct. 9 at the New York Coliseum, the scientists said that international communications of the future will involve not only telephone calls but global television and the world-wide transmission of business data. "This will require a truly global communications system, and not simply an extension of existing cable and radio facilities," they commented.

Under the proposed GT&E space communications system, ground transmitting stations in key locations throughout the world would transmit messages to one of three satellites which would in turn send the messages to receiving stations several thousand miles away. The signals would "leap-frog" large land and ocean areas, rather than go through transoceanic cables or conventional radio, it was explained.

In contrast to the 340 voice circuits now available from the United States to the rest of the world, the satellite

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457B	AMPLIFIER, REPEATER
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461A	AMPLIFIER, POWER
12912	EQUALIZER
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13531	NETWORK H88
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system would provide 3000 two-way voice channels by means of only three satellites.

"The cost of providing equivalent service with cable or radio would be prohibitive," the scientists said. They estimated that the cost of a satellite communications system would approach 250 million dollars, and that potential annual revenues would be in the billions. Revenue obtained by U.S. communications companies from international traffic is currently about 125 million dollars annually.

The satellites would be put into orbit along the equator at 22,300-mile altitudes, because at that altitude they would move at the same angular velocity as the earth's rotation, the GT&E scientists explained. Thus, the satellites would occupy a fixed position over the same point on earth, although they would be moving through space at about 6,900 miles per hour.

The first of the three satellites would be placed in orbit over the equator at 22 degrees west longitude, and would be in contact with ground stations in large portions of the United States, Canada, Mexico, Central and South America, Europe, Africa, and part of Asia. Nearly 92 per cent of the world's telephones are located in the countries which would be interconnected by this one satellite, it was pointed out.

With the addition of two additional satellites—at 142 degrees west longitude and 98 degrees east longitude—essentially world-wide coverage would be provided. "These areas today contain only 8 per cent of the world's telephones, but the next few years will bring steady increases not only in telephone traffic but other types of communications," the scientists predicted.

They explained that the number of transmitting and receiving stations in a given country would depend upon the traffic available to and from that country. A large country would require several relatively complex ground stations to handle its heavy traffic, but a small underdeveloped country would require only one relatively simple and inexpensive station. This would enable small countries to participate in the global communication system with a minimum of investment.

The GT&E scientists demonstrated a new type of electronic device which would eliminate the annoying echo effects which would normally be present in satellite communications. In a call from New York to Rome, for example, the voice signals would travel some 50,000 miles from the New York ground station to the satellite to the Rome receiving station. This distance would introduce a round-trip time lag of about .6 of a second, which would cause a noticeable echo. The new electronic device suppresses the echo to a point where it is not annoying, they explained.

The GT&E scientists also demonstrated highly compact transmitters and receivers, no larger than a cigarette carton, designed for space vehicles. The new equipment utilizes solid-state devices and new concepts in circuitry to bring size and weight within the limits required by satellites, probes, and other space vehicles.

Texas T&T Relocates Its Headquarters in Fairfield

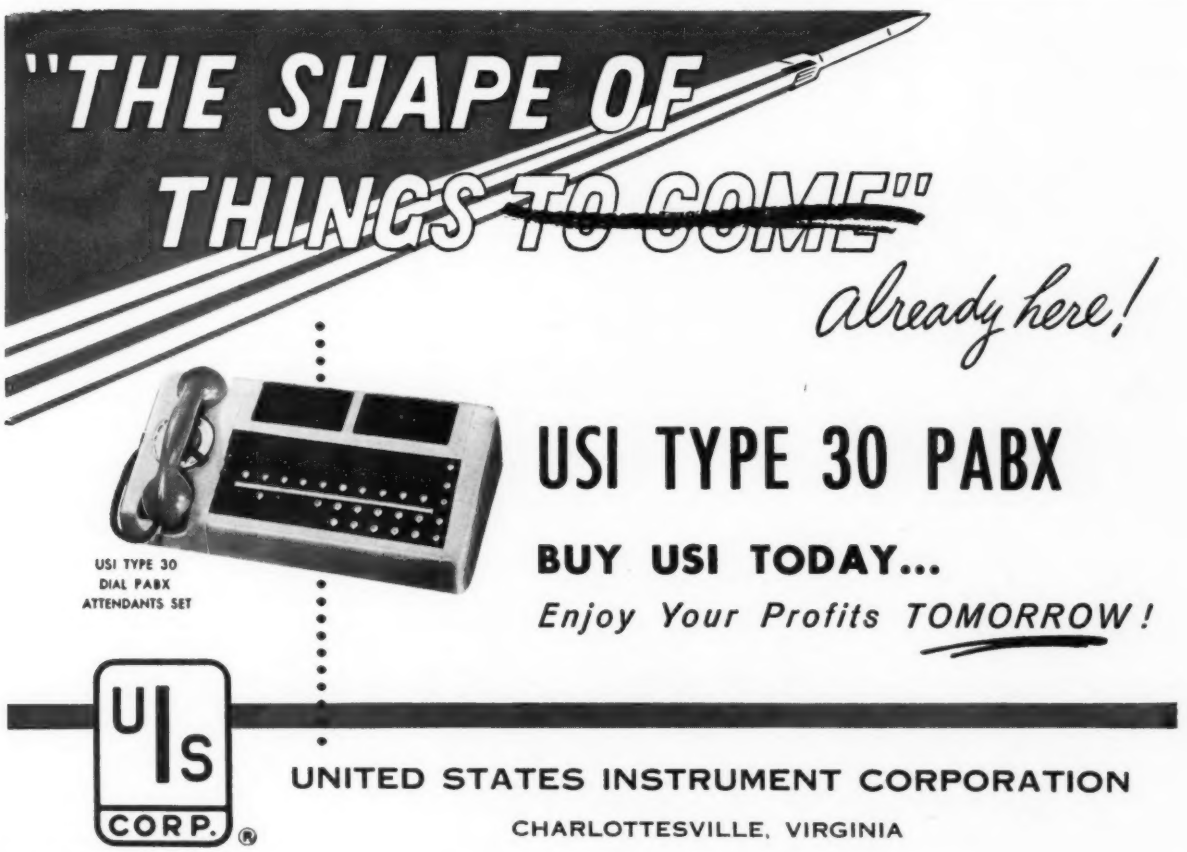
Official ground breaking ceremonies were held on Sept. 9 for Texas Telephone & Telegraph Co's new headquarters building in Fairfield. The company plans to move its headquarters from the present location at Corsicana. The new office is scheduled to be completed in 300 working days.

The new general headquarters will be one mile east of the downtown section of Fairfield.

A general office and business office, which are also being built, will be located in the downtown portion of Fairfield.

The general office will consist of five buildings—the general office itself, storeroom and classroom, garage, toll office and microwave building.

Approximately 200 people, including



Pictured at the ground breaking ceremonies for the new headquarters building of the Texas Telephone & Telegraph Co. at Fairfield are (left to right): W. G. Winters, president of Texas T&T; J. B. Swink, general commercial and traffic manager; Tas S. Watson Jr., mayor of Fairfield; C. E. Childs Jr., president of the Fairfield Chamber of Commerce; B. F. Cummings, the company's district manager; the Rev. Downey Mills of the First Baptist Church; Sam B. Carroll, county judge, and L. J. Davis, master of ceremonies.

employes and officials, gathered for the ground breaking.

W. G. Winters, president of Texas T&T, spoke to the group assembled for this ceremony, which preluded what has been termed as the biggest single development ever to take place in Fairfield.

J. B. Swink, general commercial and traffic manager of the company, along with other officials, took part in the ceremonies, as did Mayor Tas S. Watson Jr.; C. E. Childs Jr., president of the Fairfield Chamber of Commerce; T. J. Davis, master of ceremonies, and Sam B. Carroll Jr., county judge of Freestone County.

Mr. Winters told those present that, with the completion of the new headquarters, Fairfield would get the benefit of a $200,000 annual payroll, which has been the aim of Texas Telephone & Telegraph Co. officials for some time. The company has wanted to get its payroll into a town it services, Mr. Winters said. He also stated that with the completion of the new downtown business office and switchboard, Fairfield would have the very latest in dial equipment.

Mr. Swink introduced employes of the company and expressed the company's appreciation for the fine reception its moving its headquarters to Fairfield has received from local citizens, as well as the reception given to employes of Texas T&T.

2
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(Concluded from page 20)

persuasive means to maintain broadcasting's freedom.

There's good advice in Hyde's words which telephone companies should weigh carefully. Good performance is the best guard against public ownership and stringent controls.

AT&T offers rate changes

AT&T submitted proposed new tariffs for private line usage, in conformity with FCC instructions following the issuance of an initial decision in the long-pending private-line telephone and teletypewriter service investigation. The initial decision was issued last July and recommended that private-line telephone charges be reduced, while private-line telegraph service charges would be increased—to give AT&T a net increase of 1.5 million dollars for these services. Instead of a 1.5 million-dollar increase, AT&T Assistant Vice President C. F. Nelson said, the changes would result in a decrease of $308,000.

Commercial private telephone line users would pay 2.1 per cent more, and government users 7.8 per cent less. The largest jump, according to AT&T estimates, would be for press channels: a 19 per cent jump.

United Press International, big customer of the service, estimated that the proposed tariffs would increase its costs by $738,000 a year, or 18 per cent.

The discrepancy between the FCC's estimates and the actual figures is due to the fact that the commission based its figuring on 1955 revenues, while the proposed charges are based on 1961 revenues. AT&T submitted the proposed rates at the FCC's instructions. The private-line case has been pending since March, 1956.

Onan Appoints Clymar Engineering Wis. Distributor

A new distributor for Onan products has been appointed for the Milwaukee, Wis., trading area, according to announcement by Roy E. Mullin, vice president-marketing, Onan division of Studebaker-Packard Corp. Effective Sept. 26, Clymar Engineering & Sales, Inc., 416 West Walnut St., Milwaukee, Wis., will be exclusive distributors for Onan in that area, replacing Boehck Construction Equipment Corp.

Clymar Engineering is headed by Marvin Lucas Rutishauser, president, and Thor Lindgren, sales manager.

Construction Accounting

Concluded from page 26

the system's auditors or by the utility commission having jurisdiction.

Let's assume a large telephone system with 100 million dollars of net plant, 6 million dollars (6 per cent) annual recurring expansion, and a like amount of annual earnings. If it were assumed that of the 6 million dollars of annual construction, one-half thereof would have been constructed on the tax assessment date, the amount to be capitalized, assuming an average tax rate of 3 per cent, would be $90,000.

After reducing this figure by the increase in income taxes resulting from this reduction in tax expense, and for the additional depreciation which would arise by reason of the increased cost of the projects through capitalization of the taxes, we find that the increase in annual net income would amount to approximately $42,000 a year. While this is only 0.07 per cent of the 6 million dollars of annual earnings of the system, it is still a sizable sum to increase earnings by annually.

In addition, of course, the rate base would be increased by the taxes capitalized and the permitted return on the system consequently enhanced.

In case substantial expansion occurred in a single year (say 36 per cent as used above), the increase in net income for that year would be around $250,000, or over 4 per cent of the 6 million dollars of annual net income.

But this would be a non-recurring item and, therefore, it's doubtful whether these increased earnings would be given much effect in arriving at net income for the purpose of fixing a proper price-earnings ratio for the common stock of the system.

On the other hand, the recurring earnings increase of $42,000 indicated on the above assumptions might be expected to enhance the market value of the common stock by 20 times that amount or more—a minimum of $840,000.

Furlow-Laughlin Is Distributor Of Koehring Lines in La.

Furlow-Laughlin Equipment, Inc., Baton Rouge, La., has been appointed southern Louisiana distributor for Koehring, Parsons, C. S. Johnson, Buffalo-Springfield, and Ka-Mo construction equipment, according to an announcement from the Koehring Co., Milwaukee, Wis.

Furlow-Laughlin is located at 2020 North Third St., Baton Rouge. A branch office is at 3737 Veterans Memorial Hwy., Metaire, La.

Alvin Furlow is president of the firm, and W. J. Laughlin vice president.

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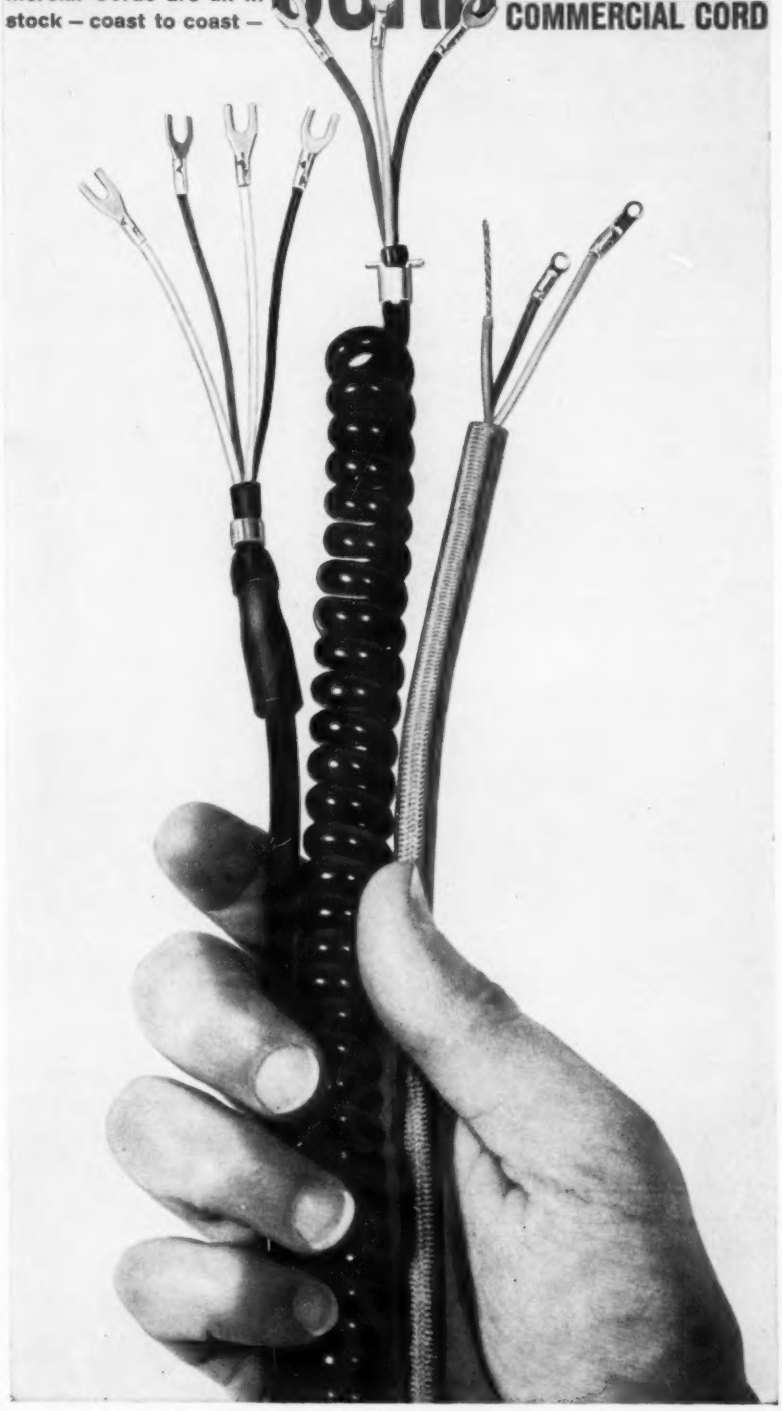

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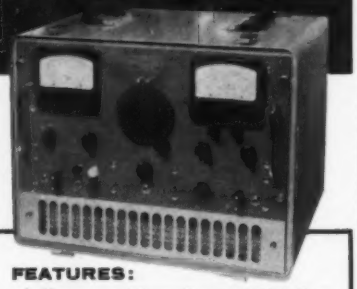

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Receiver Input: Balanced and floating with an input impedance of 600 ohms ±20 ohms from 500 cps to 50 kc.

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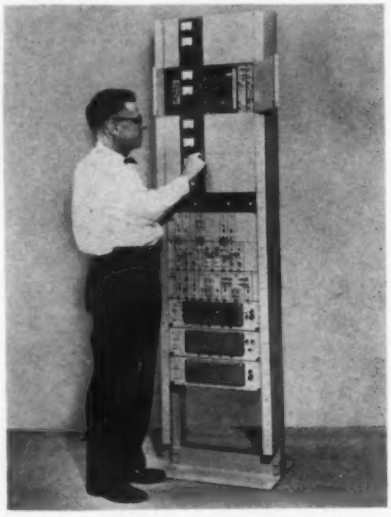
News on New Products

BROADBAND MICROWAVE SYSTEM—Lenkurt Electric Co., Inc., has announced a new transistorized broadband microwave radio system, the Type 76A, for operation in the 5925-6425 Mc Common carrier band.



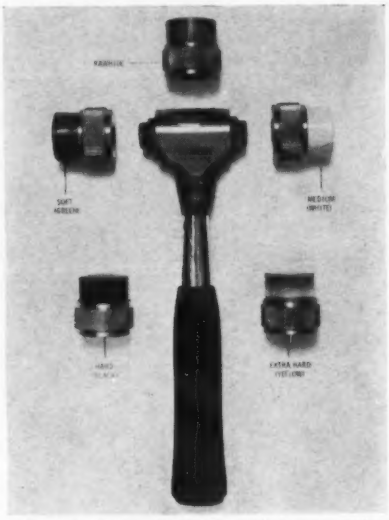
The system is fully transistorized, except for the klystrons. Klystrons have been field proven, Lenkurt reports, and provide one-watt output.

Depending on arrangement required, one channel of Type 76A is said to accommodate a single color television channel, up to 600 carrier-derived voice channels, or other equivalent information, such as high-speed data and facsimile.

Standard arrangements include either single-channel or frequency diversity operation, in the latter case employing a passive combiner which is described as functioning with no level changes or interruptions whatever. The baseband range is from below 30 cps to above 6 Mc. Request NP-1736.

MULTI-FACED HAMMER—A versatile new multi-faced hammer has been introduced by the Ramset Operation of the Winchester-Western Division of Olin Mathieson Chemical Corp. Replaceable tips are said to allow one tool to do the work of many—from sledge power to precision sensitivity.

The Shure-Drive is termed five hammers in one by Ramset, since it can be fitted with five interchangeable and replaceable tips of varying degrees of hardness. The five tips—each colored to conform with Federal specifications of durometer hardness—are scientifically compounded of plastic and are secured in steel collars.



R. H. Benedict Jr., Ramset sales manager, said the Shure-Drive hammer could be used on varied soft-faced jobs including shaping and assembling electric or other sensitive parts; work around delicate materials such as glass and glazed tiles, and precision fitting of critical parts. The tool is said to be particularly adapted to the telephone

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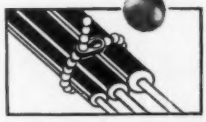

- strong — breaking point 45–95 lbs.
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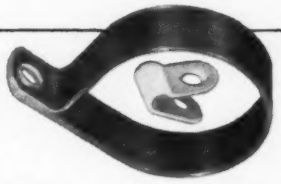
- in red, blue, yellow for color coding
  also available in 101 nylon



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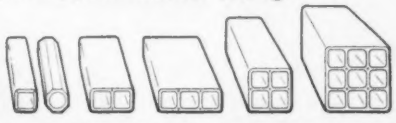

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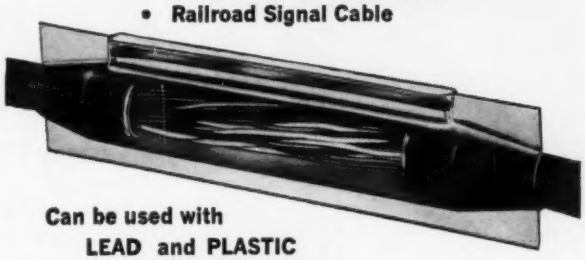

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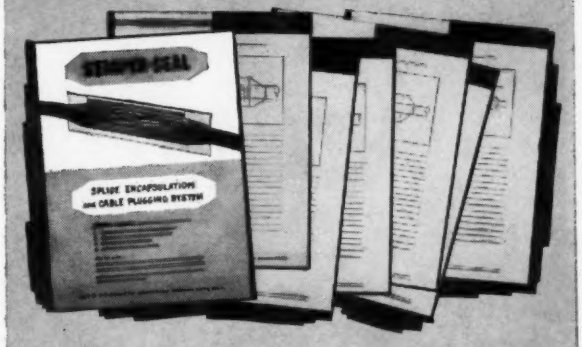

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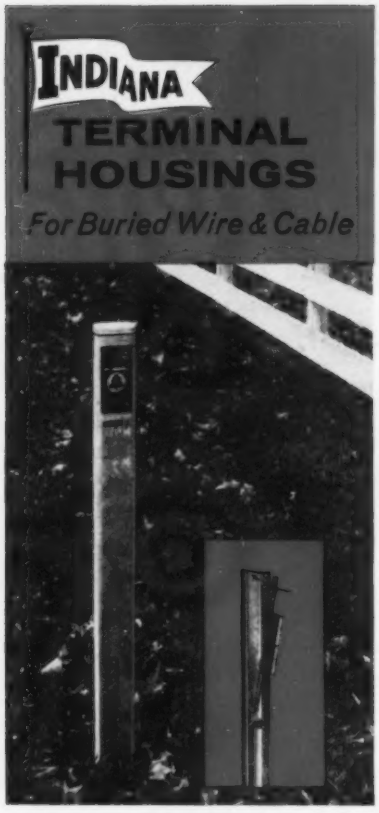

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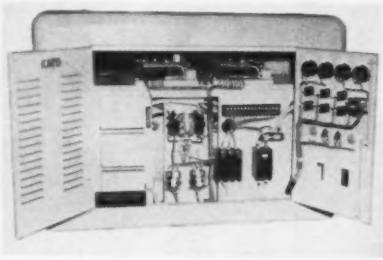
equipment and electronic industries. Request NP1737.

•

MOTOR-GENERATOR SET—Kato Engineering describes its new motor-generator set as "an unusual, stabilized power source which can supply both 120/208 volt, 400 cycle alternating current and 20 to 30 volt direct current at the same time."

Input is provided by a 20 h.p., 550 volts a.c., 3 phase, 60 cycles, 1714 rpm, squirrel cage type induction motor.



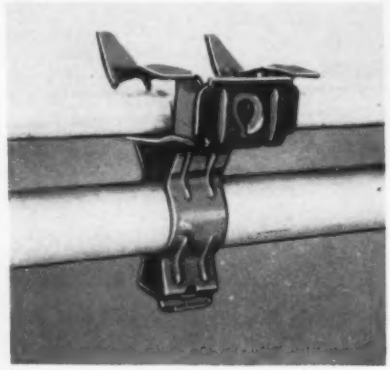
Pertaining to output, Kato says, generator is 10 kw., 12.5 kva, 120/208 volts ac, 3 phase, 400 cycles, 1714 rpm, with a direct connected exciter. Also, mounted on the same shaft is a 2 kw, 20 to 30 volt, 100 amp. direct current generator. The fully housed unit is mounted on a skid type base. A static regulator on both the ac and dc generators is said to be capable of voltage regulation of 2 per cent from no load to full load. Harmonics are under 5 per cent. Request NP1738.

•

CONDUIT HANGER ASSEMBLY—Gat Fastener Division of Erico Products Inc. has announced its new conduit hanger assembly designed to provide in one single unit a beam clamp and conduit hanger.

The assembly is made in two beam sizes—one to fit a steel flange ½ inch through ¼ inch, the other 5/16 inch through ½ inch. Assemblies are available for use with ½ inch, ¾ inch and 1 inch thin, rigid and aluminum conduit. Manufactured from heat-treated spring steel, they are described as being phosphate and wax coated for rust resistance.

The bracket or flange portion of the assembly is available as a separate unit and provides a ¼ inch—20 thread impression which, Gat says, enables the contractor to install conduit boxes flush to the underside of the steel beam. Used in conjunction with this conduit hanger assembly all conduit bends are eliminated.



Conduit hangers are also available as separate units, requiring only pliers to snap shut for positive hold, the company states. Request NP1739.

GD/T Names 5 Vice Presidents, 6 More on Executive Committee

Five men with a total of 160 years of service in the telephone industry have been named vice presidents of General Dynamics/Telecommunication, John H. Voss, president, announced on Sept. 28 as he named his entire executive committee.

G. G. HOIT

T. C. THOMPSON

General Dynamics/Telecommunication was created in August as a division of General Dynamics Corp. and is the manufacturer of Stromberg-Carlson telephone equipment. The new vice presidents, all of whom have long service with the division, are:

H. G. STRASSNER

R. R. DOBBIN

C. W. PRITCHARD

Gordon G. Hoit, senior vice president and consultant to the president; T. C. Thompson, vice president —sales; Howard G. Strassner, vice president-manufacturing; Robert R. Dobbin, vice president — engineering; and Charles W. Pritchard, vice president —sales financing.

These executives held key positions in the former Telecommunication Division of General Dynamics/Electronics before the formation of General Dynamics/Telecommunication in August, and earlier in Stromberg-Carlson.

Others whom Mr. Voss named to his executive committee, which will

direct the division's operations, are:

Arthur J. Fink, assistant to the president; Robert L. O'Connor, controller; Frederic W. Haupt, director of public relations and advertising; Walter E. Black, director of industrial relations; Charles F. Cheney, director of plans and programs; and John E. Garner, director of special projects for the military.

Messrs. Hoit, Thompson, Strassner, Dobbin, and Pritchard have all participated in the four phases of telephony—magneto, common battery, dial, and electronic switching.

A. J. FINK

R. L. O'CONNOR

When they first joined Stromberg-Carlson, later merged with General Dynamics, the magneto telephone was still prevalent in many sections of the country, Mr. Voss pointed out. Common battery power had come into use in some areas and was making steady inroads on magneto.

F. W. HAUPT

W. E. BLACK

These five men also played a key role as the industry began converting to dial equipment.

C. F. CHENEY

J. E. GARNER

In recent years, electronic developments spearheaded by Stromberg-Carlson product engineers in Rochester, have ushered in the fourth phase of telephony—electronic switching.

Gordon G. Hoit, senior vice president and consultant to the president of GD/T, joined Stromberg-Carlson as a factory clerk in 1926. Subsequently, he served in the cost department, advanc-

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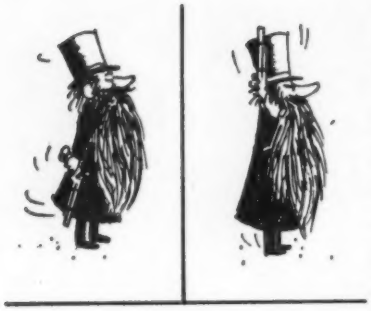

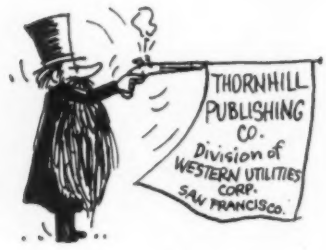

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ing to department head. He progressed through the positions of chief accountant, assistant treasurer, controller, and vice president-finance, to senior vice president.

T. C. Thompson, vice president-sales, will direct the division's entire marketing operation. He has been associated with the telephone industry since 1919, when he worked with the Illinois Bell Telephone Co. He joined Stromberg-Carlson in 1924 as an installer, later becoming a sales representative in Ohio, Nebraska and Texas. He became Pacific Coast branch manager in 1942, and was appointed general sales manager of the Telecommunication Division in 1945.

Howard G. Strassner, vice president-manufacturing, has spent his entire career working for Stromberg-Carlson and subsequently, with General Dynamics. He joined the division in 1921 in the shipping department, and after five years, became a group leader in the wire stockroom where he remained until 1930, becoming order clerk.

In 1941, he was advanced to chief of the order department. He then progressed through material control and became manager of production control for the Telecommunication Division in 1944.

In 1949 he was appointed production manager, and in 1958 was named manager of manufacturing.

Robert R. Dobbin, vice president-engineering, made major contributions to developments which resulted in electronic switching. Joining Stromberg-Carlson in 1945 as a loudspeaker design engineer, he later transferred to the Telecommunication Division, where he became engineer-in-charge on telephone apparatus. In 1949 he was named assistant chief engineer, and in 1956, became chief engineer of the Telecommunication Division.

Charles W. Pritchard, vice president-sales financing of GD/T, joined the division in 1937 as a credit correspondent, and advanced to become office manager of the Chicago sales branch.

In 1940, he was appointed assistant general credit manager, and the following year, credit manager.

He was instrumental in the formation of the Stromberg-Carlson Credit Corp., which assists Independent telephone operating companies in financing new equipment. He became treasurer of this division's subsidiary in 1951, and was named treasurer of Stromberg-Carlson as well in 1953. Later, he served as finance manager of the Telecommunication Division. He also is president of the Stromberg-Carlson Credit Corp.

Arthur J. Fink, assistant to the GD/T president, has been associated with Stromberg-Carlson for 16 years, mostly in financial departments. He became general credit manager in 1952 and assistant treasurer in 1954, a position he held until early this year, when he became manager of finance for General Dynamics/Electronics.

Robert L. O'Connor, controller, has served as telecommunication plant controller in recent years. He joined the division in 1956 as a financial analyst, and later became manager of cost accounting.

Frederic W. Haupt, director of public relations and advertising of GD/T, joined Stromberg-Carlson in 1942 and became assistant advertising manager in 1945. He was named advertising manager for the Telecommunication Division in 1955.

Walter E. Black, director of GD/T industrial relations, served as personnel director of Ball Brothers Co., Muncie, Ind., from 1946 to 1950.

He subsequently joined the Convair Division of General Dynamics, and served as labor relations administrator at General Dynamics/Pomona before transferring to General Dynamics/Telecommunication.

Charles F. Cheney, director of plans and programs, has been in the telephone industry since 1949, serving in various capacities with ITT-Kellogg. He joined Stromberg-Carlson in 1958 as staff assistant to the vice president-telecommunication, and was named manager of marketing research-telecommunication in 1959.

John E. Garner, director of special GD/T projects for the military, has been in the telephone industry since 1940, and associated with Stromberg-Carlson since 1953, when he became head of the mechanical engineering section.

In 1955, Mr. Garner was named assistant director of product development and the following year, director of product engineering.

In 1957, he became manager of military electronic projects and subsequently, assistant chief engineer. In 1959, he was named project general manager for the Titan Communications office, El Segundo, Calif. Stromberg-Carlson communication systems are today being supplied for Titan missile bases.

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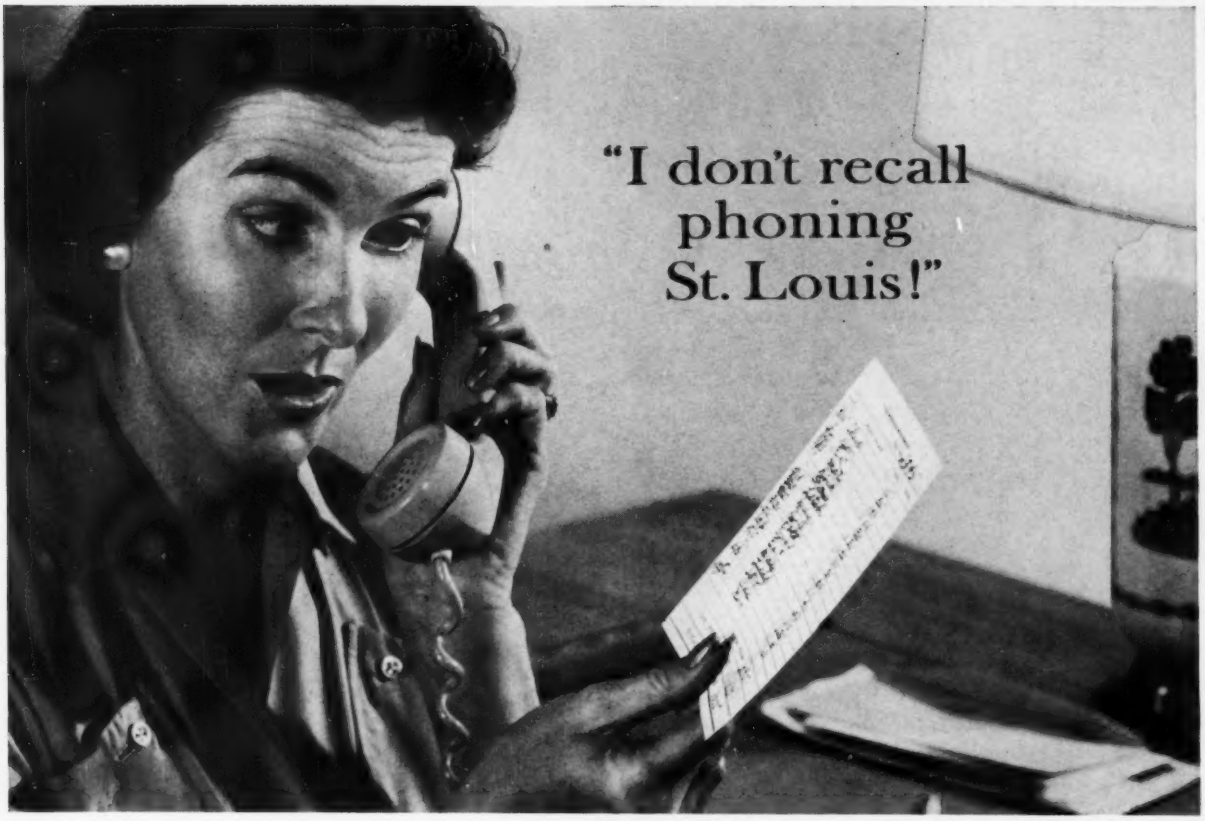

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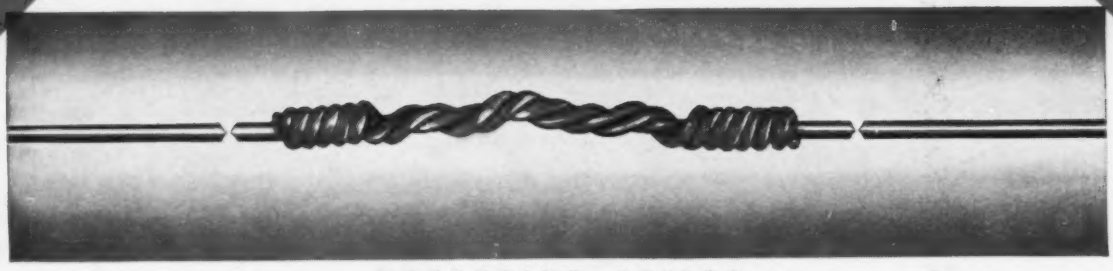

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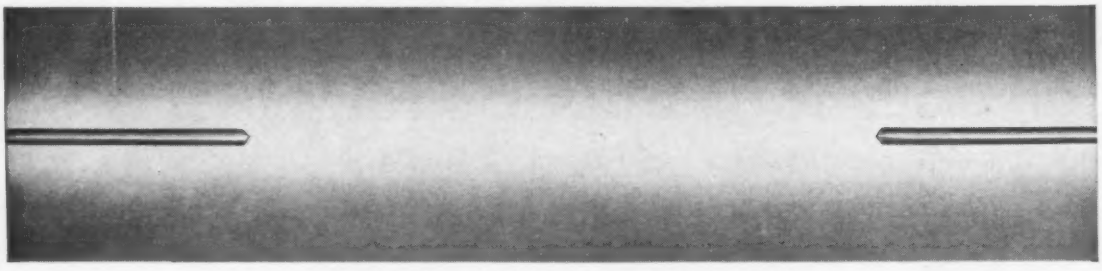

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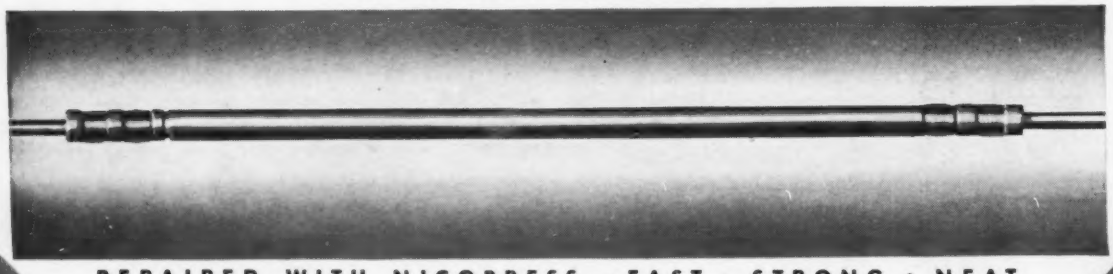

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